

No. 26. N. 1871.

W. P. P. 1871.

PHYTOLOGIST

A BOTANICAL JOURNAL.



Οὐκ ἐμεγαλύνθη ἐν ὅλῳ τῷ κόσμῳ ἡ ἐκδοτικὴ ἐπιχείρησις.

ΤΑΙΣ ΠΡΟΤΕΡΑΙΣ.

Beneficentis univere germinantis, et non solum in se, sed et in seculum
Huius in secula. — Hymn. in Pange. n. 10.

LONDON

WILLIAM PAMPHILL 45, NORTH STREET, 1871.

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 *Part the Third is now ready.*

A CATALOGUE OF WILLIAM PAMPLIN'S SECOND-HAND STOCK OF BOOKS, BOTH BOTANICAL AND MISCELLANEOUS.

SOWERBY'S ENGLISH BOTANY:

Containing a description and drawing of every British Plant, *life size*, full coloured by hand, with Illustrations of the Organs. Edited and brought up to the present standard of scientific knowledge by JOHN T. SYME, F.L.S., etc., Lecturer on Botany at Charing-cross and Westminster Hospitals, etc. Monthly Parts at 5s. Prospectus and Specimen on application.

London: ROBERT HARDWICKE, 192, Piccadilly.

LIST OF A FEW EXTRAORDINARILY CHEAP BOTANICAL BOOKS ON SALE. MOSTLY SECOND-HAND.

- Abbot, C. Flora Bedfordiensis, comprehending such Plants as grow wild in the county of Bedford. *Plates. 1s. 6d.* 1798
- A Catalogue of the Vasculares, or Phænogamous Plants, of Great Britain, with Alphabetical Index of Genera, and an Enumeration of all the Varieties or Subspecies. *3d., or 2s. 6d. per dozen copies.*
- Agardh, C. A. Systema Algarum. Complete in one volume, 352 pages. Clean as new, and uncut. *1s. 6d.* Lund. 1824

LANCASHIRE AND CHESHIRE BOTANY.

*A List of the less common Plants found about Warrington. By the
MEMBERS of the Warrington Field Naturalists' Society.*

(Note.—The numbers prefixed to the names are those of the London Catalogue.)

On the northern border of Cheshire, and at the distance of about three miles to the south of Warrington, there stands a New Red Sandstone eminence, called Hill Cliff, from which, on a clear day, a good view may be obtained of the surrounding country, including many of the localities mentioned in the following list:—

Standing on the summit of the northern slope, with our faces turned northwards, we see spread out beneath us a valley of some twelve miles wide. The horizon is bounded by the higher lands about Sutton and St. Helen's, with Billinge Hill and beacon, while to the right of these appear Rivington Pike and the famed Two Lads.

Along the horizon to the left, we may see the neighbourhood of Prescott, Rainhill and Peckshill, below which and nearer our station, the tall chimney shafts of Runcorn and Runcorn Gap are pouring forth their fleecy cloud-like vapour. Beyond this, but not visible from the place where we stand, is Hale, on the bank of the Mersey, opposite its confluence with the Weaver.

Cuerdley Marsh extends from Runcorn Gap to Fiddler's Ferry, a distance of about four miles. Inland from this lies the barren common called Greystone Heath.

Directly beneath us, and seemingly within a stone-throw, lie the Duke's and Old Quay Canal. Beyond these again, winding among green and level meadows, the result of his own overflowings and deposits—

“Mersey's gentle current, which too long
By fame neglected, and unknown to song,
Between his rushy banks (no poet's theme)
Had crept inglorious, like a vulgar stream,
Reflects th' ascending seats with conscious pride
And dares to emulate a classic tide.”—Mrs. Barbauld.

Close to the town, and surrounded on three sides by a loop of the river, lies Arpley, a level track of rich meadow-land.



Casting our eyes over the towers and chimneys of Warrington, we see the tall and taper spire of Winwick, one of the richest rectories in England. This portion of South Lancashire appears like a well-wooded country, owing to the number of trees, chiefly oak, grown in the hedgerows.

The township of Kenyon lies to the right of Winwick, and that brown, scorched-looking patch of land in the same direction is Woolston Moss, a botanical Paradise in August and September, the resort of bees and botanists.

Lymm, famed by the geologist as one of the places where the footprints of the Batrachians occur in the New Red Sandstone, may be seen almost due east from where we stand. Out of sight, and about three miles to the south, stands Stretton Moss, and formerly, Whittley Reed, now under cultivation.

The range of which the hill we are standing on forms part, extends along the course of the Mersey to Helsby, and includes Hill Cliff, Keckwick Hill, with Runcorn, Overton and Helsby Hills, the latter of which, strange to say, bears in some aspects, considerable resemblance to the profile of a living statesman.

The Dingle and the Denna are formed by the steep, wood-covered banks of two upland rivulets, the former on the east side of Hill Cliff, and the latter on the west, its waters supplying the reservoir of the Warrington Water-works. The overflow from the latter, in wending its way towards the river, passes through Lower Walton, and to the right of Acton Grange and Morley Common.

As to the character of the soil, it is in the bed of the valley alluvial, gradually passing southwards, to sandy. Crossing the Sankey Canal, and passing the Moated Hall of Bewsey, we come into Burtonwood, where the soil is a stiff clay. Orford is situated on the verge of the Borough northwards, and the soil is a rich black loam. Dobbie's Locks is where the Old Quay Canal enters the Mersey, a little above Warrington.

The localities here enumerated are included within a radius of about twelve miles around Warrington.

4. *Thalictrum flavum*, L. Arpley, Acton Grange, scarce.
16. *Ranunculus Lingua*, L. Sankey, in Lancashire, and Lower Walton, in Cheshire, plentiful where it occurs.
18. *Ranunculus auricomus*, L. Dutton Bottoms, Cheshire.
21. *Ranunculus bulbosus*, L. Arpley.

36. *Nymphæa alba*, *L.* Bewsey.
37. *Nuphar lutea*, *Sm.* Plentiful in the Old Quay Canal.
43. *Papaver somniferum*, *L.* Cornfield, Acton Grange.
45. *Chelidonium majus*, *L.* Waste places, near houses.
48. *Corydalis claviculata*, *DC.* Hedges in Cheshire.
58. *Coronopus Ruellii*, *Gært.* Bank Quay.
65. *Teesdalia nudicaulis*, *Br.* Sandy places, Hill Cliff, Cheshire.
70. *Lepidium campestre*, *Br.* Orford, etc.
79. *Draba verna*, *L.* Hill Cliff, and Hollin Hedge, Cheshire.
84. *Cardamine amara*, *L.* Dallam, Old Quay Canal bank. The flowers of this species are very fugitive, wherein they differ from *C. pratensis*. Specimens of this last were in flower in September of this year.
88. *Arabis thaliana*, *L.* Orford, etc.
95. *Barbarea vulgaris*, *Br.* River-side.
99. *Nasturtium terrestre*, *Br.* Arpley.
106. *Erysimum cheiranthoides*. River-side, near Dobbie's Locks.
125. *Reseda Luteola*, *L. Hale.*
133. *Viola odorata*, *L.* Aston.
138. *Drosera rotundifolia*, *L.* { Woolston and Chat Mosses in
140. *D. anglica*, *Huds.* { Lancashire, and on Stretton
Moss, in Cheshire.
150. *Dianthus deltoides*, *L.* Hale.
173. *Honckeneja peploides*, *Ehrh.* Hale shore.
175. *Spergularia rubra*, *St. Hil.* Sandy soils in Cheshire.
182. *Arenaria trinervis*, *L.* Moist places.
184. *Stellaria nemorum*, *L.* Bank of the Mersey, near Dobbie's Locks.
191. *Cerastium aquaticum*, *L.* With the above.
204. *Malva moschata*, *L.* Banks of the Chester and Warrington Railway.
205. *M. sylvestris*, *L.* Aston, Cheshire.
215. *Hypericum perforatum*, *L.* Arpley, etc.
217. *H. quadrangulum*, *L.* Morley Common.
218. *H. humifusum*, *L.* Hill Cliff.
220. *H. pulchrum*, *L.* Sankey and Burtonwood.
238. *Erodium cicutarium*, *Sm.* Roadside near Tom Paine's Bridge.
231. *Geranium pratense*, *L.* - River-side, about Warrington.
236. *G. dissectum*, *L.* Higher Walton.

238. *G. lucidum*, *L.* Higher Walton.
 243. *Oxalis Acetosella*, *L.* Dingle ; Denna.
 247. *Rhamnus Frangula*, *L.* Burtonwood, etc.
 248. *Spartium scoparium*, *L.* Cobbs ; Daresbury, etc.
 249. *Ulex europæus*, *L.*
 251. *Genista tinctoria*, *L.* Kenyon and Hale.
 252. *Genista anglica*, *L.* Greystone Heath and Highfield Moss.
 257. *Ononis arvensis*, *L.* Sankey.
 258. *Medicago sativa*, *L.* Arpley.
 264. *Melilotus officinalis*, *L.* Woodend.
 275. *Trifolium arvense*, *L.* Acton Grange.
 280. *Trifolium fragiferum*, *L.* Hale.
 284. *Lotus major*, *Scop.* Morley Common.
 291. *Ornithopus perpusillus*. Appleton, Cheshire.
 305. *Lathyrus Aphaca*, *L.* Kenyon.
 316. *Prunus avium*, *L.* Appleton, Cheshire.
 321. *Geum urbanum*, *L.* Latchford ; Winwick.
 322. *Geum rivale*, *L.* Appleton, Cheshire, 1857.
 323. *Agrimonia Eupatoria*, *L.* Hale, Kenyon ; etc.
 334. *Comarum palustre*, *L.* Old Quay Canal, etc.
 335. *Fragaria vesca*, *L.* Appleton, Cheshire.
 336. *Fragaria elatior*, *Ehrh.* Vale Royal.
 356. *Alchemilla vulgaris*, *L.* Arpley, etc.
 357. *Alchemilla arvensis*, *L.* Orford, etc.
 366. *Pyrus Aucuparia*, *Gært.* Appleton.
 367. *Epilobium angustifolium*, Chat Moss.
 368. *Epilobium hirsutum*, *L.*
 369. *Epilobium parviflorum*, *Schreb.* The height and general appearance of this plant is exceedingly variable, it being sometimes only three inches, and sometimes five feet high, with the stem erect or procumbent, and the leaves petiolate.
 370. *Epilobium montanum*, *L.*
 372. *Epilobium palustre*, *L.*
 373. *Epilobium tetragonum*, *L.* } Moist and shady places, frequent.
 377. *Circæa lutetiana*, *L.* Cuerdley, and Appleton, Cheshire.
 380. *Myriophyllum verticillatum*, *L.* Arpley.
 390. *Lythrum Salicaria*, *L.* Pits, frequent.
 391. *Peplis Portula*, *L.* Greystone Heath.
 393. *Bryonia dioica*, *L.* Behind Bank Hall.
 394. *Montia fontana*, *L.* Morley Common, etc.

399. *Scleranthus annuus*, *L.* Hale.
409. *Sedum Telephium*, *L.* Hale.
434. *Chrysosplenium oppositifolium*, *L.* Appleton.
437. *Adoxa moschatellina*, *L.* Appleton.
439. *Cornus sanguinea*, *L.* Bewsey.
441. *Hydrocotyle vulgaris*, *L.* Morley Common.
442. *Sanicula europæa*, *L.* Denna ; Appleton.
450. *Apium graveolens*, *L.* Salt marshes, Ditton.
454. *Helosciadium nodiflorum*, *Koch.* Plentiful.
455. *Helosciadium inundatum*, *Koch.* Greystone Heath.
457. *Ægopodium Podagraria*, *L.* Dobbie's Locks.
461. *Bunium flexuosum*, *Wrieth.* Appleton.
470. *Cenanthe fistulosa*, *L.* Burtonwood and Cuerdley.
473. *Cenanthe crocata*, *L.* Sankey, Arpley.
474. *Cenanthe Phellandrium*, *Lam.* Old Quay, Latchford.
475. *Æthusa Cynapium*, *L.* Waste places.
493. *Torilis Anthriscus*, *Gærtn.* Hedges. Stem, and the rays of the umbels, hispid with rigid points, those of the stem pointing downwards, those of the ray upwards.
498. *Anthriscus sylvestris*, *L.*
506. *Viburnum Opulus*, *L.* Appleton, etc.
514. *Galium cruciatum*, *With.* River-side, above Warrington.
526. *Sherardia arvensis*, *L.*
527. *Asperula odorata*, *L.* Dingle ; Appleton.
531. *Valeriana dioica*, *L.* Kenyon.
532. *Valeriana officinalis*, *L.* Ditches.
534. *Fedia olitoria*, *Vahl.* Appleton.
554. *Tragopogon pratensis*, *L.* Pastures, abundant.
546. *Helminthia echioides*, *Gærtn.* Hale.
549. *Apargia hispida*, *Willd.* Kenyon.
557. *Lactuca muralis*, *Less.* Stretton.
594. *Serratula tinctoria*, *L.* Kenyon.
598. *Carduus marianus*, *L.* Sankey.
600. *Carduus eriophorus*, *L.* Hale.
619. *Eupatorium cannabinum*, *L.* Lower Walton.
622. *Tanacetum vulgare*, *L.* Arpley, etc.
641. *Aster Tripolium*, *L.* Salt marshes.
642. *Solidago Virgaurea*, *L.* Park-side.
647. *Senecio erucæfolius*, *L.* Hale.
650. *Senecio saracenicus*, *L.* River-side (introduced?).

658. *Pulicaria dysenterica*, *Gærtn.* Bewsey, etc.
667. *Anthemis nobilis*, *L.* Hale.
678. *Campanula latifolia*, *L.* Lower Walton ; Bewsey.
687. *Jasione montana*, *L.* Hill Cliff.
690. *Erica Tetralix*, *L.* Woolston Moss, etc.
699. *Andromeda polifolia*, *L.* Woolston Moss.
703. *Vaccinium Myrtillus*, *L.* Cobbs, Cheshire.
706. *Vaccinium Oxycoccus*, *L.* Woolston Moss.
716. *Vinca minor*, *L.* The Denna. It has not flowered with us this year.
719. *Gentiana Pneumonanthe*, *L.* Greystone Heath and High-field Moss.
724. *Erythræa Centaurium*, *Pers.*, δ , *latifolia*, *Sm.* Kenyon, clay soil.
725. *Chlora perfoliata*, *L.* Kenyon, Hale.
727. *Menyanthes trifoliata*, *L.* Pits, Burtonwood, etc.
729. *Convolvulus arvensis*, *L.* Sankey, etc.
730. *Convolvulus sepium*, *L.*
740. *Verbascum Thapsus*, *L.* Hale.
754. *Veronica Anagallis*, *L.* Arpley.
757. *Veronica montana*, *L.* Dingle ; Appleton.
777. *Scrophularia aquatica*, *L.* Arpley.
778. *Digitalis purpurea*, *L.*
781. *Linaria Cymbalaria*, *Mill.* Orford.
801. *Lycopus europæus*, *L.* Arpley.
814. *Calamintha officinalis*, *Angl.* Roadside, Cheshire.
827. *Lamium Galeobdolon*, *Crantz.* The Denna.
835. *Galeopsis versicolor*, *Curtis.* Plentiful in potato fields.
836. *Stachys Betonica*, *Benth.* Stretton.
846. *Scutellaria galericulata*, *L.* Arpley, etc.
847. *Myosotis palustris*, *With.*
856. *Lithospermum arvense*, *L.* Orford.
859. *Symphytum officinale*, *L.* Burtonwood.
861. *Borago officinalis*, *L.* Burtonwood.
862. *Lycopsis arvensis*, *L.* Overton, Cheshire.
872. *Pinguicula vulgaris*, *L.* Stretton Common.
875. *Utricularia vulgaris*, *L.* Dallam ; Acton Grange.
885. *Hottonia palustris*, *L.* Acton Grange, plentiful.
886. *Lysimachia vulgaris*, *L.* Acton Grange.
888. *Lysimachia nummularia*, *L.* Arpley ; Orford.

889. *Lysimachia nemorum*, *L.* Denna.
890. *Anagallis arvensis*, *L.*
891. *Anagallis tenella*, *L.* Greystone Heath.
894. *Glaux maritima*, *L.* Hale, Cuerdley Marsh, etc.
895. *Armeria maritima*, *L.* Cuerdley Marsh.
897. *Statice Limonium*, *L.* Salt marsh, Hale.
904. *Plantago maritima*, *L.* Cuerdley Marsh.
905. *Plantago Coronopus*, *L.* Hale.
931. *Polygonum Bistorta*, *L.* Black Brook ; Orford.
960. *Empetrum nigrum*, *L.* Overton, etc.
971. *Euphorbia exigua*, *L.* Burtonwood, etc.
983. *Humulus Lupulus*, *L.* Arpley, etc., common.
1028. *Myrica Gale*, *L.* Woolston and Stretton Mosses, common.
1033. *Spiranthes autumnalis*, *Rich.* Speke.
1038. *Listera ovata*, *Br.* Sankey.
1045. *Orchis Morio*, *L.* Westy Barn, Latchford.
1070. *Crocus nudiflorus*, *Sm.* Howley.
1081. *Allium Scorodoprasum*, *L.* Sankey.
1104. *Tamus communis*, *L.* Acton Grange, etc.
1107. *Hydrocharis Morsus-ranæ*, *L.* Latchford, etc.
1107*. *Anacharis Alsinastrum*, *Bab.* Is very plentiful in the ponds in Arpley.
1108. *Stratiotes aloides*, *L.* Latchford, planted.
1110. *Alisma ranunculoides*, *L.* Acton Grange.
1113. *Sagittaria sagittæfolia*, *L.* Plank Lane, Lancas.
1114. *Butomus umbellatus*, *L.* Arpley ; Bewsey.
1115. *Triglochin maritimum*, *L.* Cuerdley Marsh.
1116. *Triglochin palustre*, *L.* Greystone Heath.
1119. *Potamogeton pectinatus*. Old Quay Canal.
1120. *Potamogeton pusillus*. Ponds, Arpley Meadows.
1124. *Potamogeton crispus*. Ditches, Dalam Meadows.
1130. *Potamogeton lanceolatus*. Ditch near Old Quay Canal.
1135. *Ruppia maritima*. Norton and Cuerdley Marshes.
1136. *Zannichellia palustris*, *L.* Cuerdley Marsh.
1139. *Lemna gibba*, *L.* Cuerdley plentiful.
1140. *Lemna polyrhiza*, *L.* Arpley.
1141. *Lemna trisulca*, *L.*
1142. *Arum maculatum*, *L.* The Dingle ; Appleton.
1143. *Acorus Calamus*, *L.* Longford Meadows.
1145. *Sparganium simplex*, *Huds.*

1146. *Sparganium ramosum*, *Huds.*
1147. *Typha latifolia*, *L.* Burtonwood; Arpley.
1148. *Typha angustifolia*, *L.* Morley Common.
1152. *Juncus glaucus*, *Sibth.* Called the Wire Rush in Lancashire.
1160. *Juncus compressus*, *Jacq.* Sankey.
1169. *Luzula sylvatica*, *Bich.* Keckwick Hill.
1170. *Luzula pilosa*, *Willd.* Appleton.
1175. *Narthecium ossifragum*, *Huds.* Woolston and Stretton Moss.
1178. *Cladium Mariscus*, *Br.* Stretton Moss. Has not flowered this year.
1179. *Schoenus nigricans*, *L.* Stretton Moss.
1180. *Rhynchospora alba*, *Vahl.* Woolston Moss.
1183. *Blysmus rufus*, *Link.* Hale shore.
1184. *Scirpus lacustris*, *L.* Old Quay Canal; Kenyon.
1186. *Scirpus setaceus*, *L.* Kenyon, etc.
1190. *Scirpus maritimus*, *L.* Lines the bank of the Mersey, considerable distance below Warrington.
1191. *Scirpus sylvaticus*, *L.* Sankey, Canal banks; Carbrook, Kenyon.
1192. *Scirpus palustris*, *L.* Old Quay Canal, etc.
1196. *Scirpus cœspitosus*, *L.* Overton Hills.
1198. *Scirpus fluitans*, *L.* Greystone Heath.
1199. *Eriophorum vaginatum*, *L.* Woolston Moss.
1200. *Eriophorum angustifolium*, *Rh.* Woolston Moss.
1205. *Carex pulicaris*, *L.* Cobbs; Greystone Heath.
1209. *Carex stellulata*, *Good.* Greystone Heath, etc.
1211. *Carex ovalis*, *Good.* Arpley.
1212. *Carex curta*, *Good.* Woolston Moss, abundant.
1213. *Carex elongata*, *L.* Arpley; Longford Meadows.
1217. *Carex intermedia*, *Good.* Bank Quay, river-side.
1219. *Carex intermedia*, var. ? Arpley.
1218. *Carex arenaria*, *L.* Hale shore.
1220. *Carex muricata*, *L.* Kenyon, etc.
1222. *Carex vulpina*, *L.* A small dipterous (?) larva feeds in the fruit of this species, causing it to become almost twice its usual length, and falcate.
1224. *Carex paniculata*, *L.* Old Quay Canal bank, etc. Grows in clumps, usually upon mounds, caused by the successive

- decay and reproduction of the roots ; thus rising, Phoenix-like, out of its own ashes. These mounds, if in a favourable situation and unmolested, will rise to a considerable height. One we saw on the edge of Tatton Mere, Tatton Park, Cheshire, which had attained the height of between five and six feet. Cows eat the leaves, etc., of this species.
1228. *Carex vulgaris*, Fries. Woolston Moss, Latchford Heath.
1232. *Carex acuta*, L. Kenyon. Variable in the breadth of its foliage.
1234. *Carex flava*, L. Morley Common.
1235. *Carex extensa*, Good. Hale shore.
1238. *Carex distans*, L. Hale shore.
1239. *Carex binervis*, Sm. Greystone Heath.
1241. *Carex panicea*, L. Stretton Moss, etc.
1248. *Carex pendula*, Huds. Acton Grange.
1249. *Carex Pseudo-Cyperus*, L. Burtonwood, etc. Plentiful.
1250. *Carex glauca*, Scop. Appleton.
1252. *Carex pilulifera*, L. Cobbs, etc.
1257. *Carex hirta*, L. Old Quay Canal bank, etc.
1258. *Carex ampullacea*, Good. Do ; Stretton Moss.
1260. *Carex paludosa*, Good. Orford Park. etc.
1261. *Carex riparia*, Curtis. Acton Grange.
1315. *Melica uniflora*, Retz. Dingle.
1367. *Hordeum pratense*, Huds. Sankey.
1287. *Milium effusum*, L. The Denna.
1307. *Avena fatua*, L. Arpley Meadows.
1322. *Glyceria fluitans*, Br. Arpley Meadows.
1376. *Polypodium Dryopteris*. The Denna.
1387. *Lastrea Filix-mas*, Presl.
1391. *Lastrea dilatata*.
1393. *Athyrium Filix-fœmina*, N.
1400. *Asplenium Ruta-muraria*, L. Stewart's Bridge.
1402. *Scolopendrium vulgare*, Sym. Appleton, etc.
1403. *Blechnum boreale*, Sw. Woolston Moss, etc.
1404. *Pteris aquilina*, L. Hill Cliff, etc.
1409. *Osmunda regalis*, L. Walton, Woolston Moss.
1410. *Botrychium Lunaria*, Sw. Delemere Forest.
1411. *Ophioglossum vulgatum*, L. Sankey.
1423. *Equisetum sylvaticum*, L. Orford Park.
1429. *Chara flexilis*(?), L. Lower Walton.

Note.—The two following stragglers from cultivation are entered as species uncertain in locality; they may grow accidentally in many places, though rarely established in any:—*Armoracia rusticana*, *Camelina sativa*.

PONDWEEDS.

History and Description of the British Species usually arranged under the Natural Order POTAMACEÆ.

The following monograph of the British aquatic plants usually arranged under the Natural Order *Potamaceæ*, and under the genera *Potamogeton*, *Ruppia*, *Zannichellia*, and *Zostera*, is drawn up in order to present the inquisitive reader with a comprehensive and popular, or simple and intelligible, digest of our present knowledge of the history, characters, and distribution of the species belonging to this Order, and their genera, viz. such as are of British growth, which have been found, or are now found, in the rivers, lakes, ponds, ditches, etc., of the fresh, or salt, or brackish waters of the United Kingdom.

The ancient history of the plants which constitute this Order is almost, if not quite, as obscure as are several of the species themselves.

The most ancient and venerable botanical authority, viz. THEOPHRASTUS, cannot, with safety, be quoted as having observed and described any species of *Potamogeton*. He hints that some marine *Algæ* grew on the shores of Greece, and that in the great ocean, beyond the pillars of Hercules, *i. e.* outside of the Strait of Gibraltar, there were *fuci* so large that they could not be grasped by the hand. This will not appear marvellous to marine botanists who have seen the long and stout stems of *tangle*, or sea-ware, which are frequently, in stormy seasons, strewed on our shores.*

DIOSCORIDES, who lived at least about four hundred years

* Sprengel quotes Theophrastus as the observer of *Potamogeton serratus*, Hudson, *P. crispus* of authors, a plant which the father of botany names *τριβολος εν τοις ελωδεσι των ποταμων*, "the *Tribulus* which grows in marshes by rivers," or "of rivers." Almost all the commentators on Theophrastus, certainly Scaliger and Bodæus (see their folio edition, 1644), call this plant *Tribulus aquaticus*, which is a synonym of *Trapa natans*, Water Caltrops of the moderns, and well-known to the ancients, but both generically and specifically distinct from the Pondweeds.

after Theophrastus, does mention in his 4th book and 96th chapter, one species of *Potamogeton*, viz. *P. natans*, and he is followed by Pliny, who copies *verbatim* his learned Greek predecessor. The description given by the latter in his 26th book and 33rd chapter is almost identical with that of Dioscorides. Let the learned reader compare the descriptions or notices of the plants given us by these two ancient historians, and he will see their coincidence.

The following is quoted verbally from the new translation of Pliny, vol. v. p. 172, H. G. Bohn's edition:—"Potamogiton . . . is a plant similar to Beet in the leaves, but smaller and more hairy, and rising but little above the surface of the water." The eminent commentator on Dioscorides gives the following version of his author's text, *loco citato*, p. 713, ed. 1570:—"Potamogeton folium fert betæ simile, hirsutum, paululum supereminens extra aquam."

Pliny adds, "Castor has given a different description of this plant. According to him, it has a smaller leaf, like horsehair, with a long smooth stem, and grows in watery localities." (Book 26, c. 33, vol. v. p. 173, as above.)

Billerbeck ('Flora Classica,' p. 37) makes the first species *P. natans*, and the second *P. pectinatum*. It may be said that neither of these species agree exactly with Pliny's description.

This would be a puzzle to the modern readers of Pliny and Dioscorides, to learn why these authors call the Potamogetons hairy plants, hairier than Beet, if they did not know or were not told that the plant described by these eminent botanists is not a *Potamogeton*, but *Polygonum amphibium*. This is a hairy-leaved plant, whether it grows in the water, or on land not far from water; but in the latter it is remarkably hairy. We are indebted to the learned and observant Ray for the rectification of this ancient error. The floating or aquatic *Persicaria*, in early summer, ere it has thrown up its handsome spike of rose-coloured flowers, might be, at a distance, easily mistaken for lanceolate-leaved forms of *Potamogeton natans*.

Can any reader inform us if any of the more recent editors of Dioscorides and Pliny have anywhere pointed out this mistake and traced its origin?

Every botanist knows that the Pondweeds (*Potamogetons*) are not hairy, and also that Beet is not hairy; yet both Dioscorides

and Pliny compare it with this latter plant, and state that it is "more hairy" than a perfectly smooth plant.

When Pliny was more read and better understood than he is now, both scholars and sciolists amused themselves in hunting out and exposing his errors, while some of the great *Coryphæi* of those days, like Scaliger, Salmasius, etc., tampered with his text, and, like Procrustes, amplified or mutilated their author's language *ad libitum*.

Tragus, Cordus, Fuchsius, Dodonæus, Gerard, and other botanists of the sixteenth century, notice the Pondweeds; but very little is to be gleaned from their works to help to elucidate the history of these species.

Caspar Bauhin, in the first half of the seventeenth century, collected (see C. B., 'Pinax' and 'Prodromus') as many as ten species of *Potamogetons*, viz. 1st, *P. rotundifolium*, *P. natans*, Linn., and enumerates thirteen botanists in whose works it has a place.

2nd. *P. salicifolia*, *Potamogeton sive Fontalis et spicata* of Lobel, Observ. 174, and *P. angustifolium* of Gerard. Six authors are quoted as authorities for this species, which is no *Potamogeton*, but *Polygonum amphibium* of the modern botanists.

3rd. *Potamogeton longo serrato folio* (with long serrated leaf) is said to be *P. lucens*.

4th. *P. foliis latis splendentibus* is *P. perfoliatus*, Linn.

5th. *P. foliis angustis splendentibus*, *P. cuspidatus*, *P. compressus*, *P. gramineus*, *P. lanceolatus*, *P. angustifolius*, and other modern species, might be representatives of the ancient one. It is *P. alterum* of Dodoens.

6th. *P. crispis foliis sive Lactuca ranarum*. This *P. crispus* is identified by its vulgar name, "Frog's Lettuce." This is one of the utilities of common or popular names, that they are not so easily altered as the more scientific and descriptive appellations.

This well-known species has been observed and described by Tragus, Lobel, Clusius, etc. The two last-named authors have given figures of the plant. From these we know that they observed the larger form and the smaller one; or, as we moderns usually express a double but not identical form, they knew the typical species *P. crispus*, and the variety *P. serratus*. In those days type had not so extensive a signification as it has now obtained.

The 7th, *P. ramosum angustifolium*, has no name bearing the honours of its paternity. It was communicated by Dr. Frank, and is described in Bauhin's 'Prodromus.'

The remaining species or forms named in the 'Pinax,' and described in the 'Prodromus,' may be considered as unknown or doubtful; no author has identified them with recognized species of the present day.

Gerard and Parkinson did not contribute much to the knowledge of our British *Potamaceæ*.

One of our earliest botanical catalogues, viz. that of the Oxford Garden, 1651, contains five or six species; one being, as might be suspected, *Polygonum amphibium*. These are *P. natans*, *P. lucens*, *P. perfoliatus*, and *P. pectinatus* (*ferule folio*) or some other joined with it (*P. gramineum ramosum*), *P. gramineus*, Sm.?

In Ray's catalogue of the plants of England ('Catalogus Plantarum Angliæ') there are nine species, but only six when the *Polygonum*, *Ruppia*, and *Zannichellia* are deducted, for these all figure as *Potamogetons* in all the works of this period. In his 'Synopsis of the British Plants,' 1696, there are ten species with *Ruppia*. The increase is among the grass-leaved species. One of these is *P. compressus*, another *P. pusillus*.

In Dillenius's edition of the 'Synopsis' there are sixteen species described or named, and of these, six are generally supposed to be well-known species of the broad-leaved kinds, viz. *P. natans*, *P. lucens*, *P. perfoliatus*, *P. crispus*, *P. serratus*, Huds., *P. densus*, Dillenius's No. 5*. *P. rotundifolius*, Loesel, p. 205, and which Haller, No. 844, calls a distinct species, may possibly turn up in British waters.

The narrow-leaved species of *Potamogetons* in the 'Synopsis' are not determined, possibly not determinable.

In Hudson's 'Flora Anglica,' 1st ed. 1762, there are ten species described, viz. five broad-leaved species as above, omitting *P. densus*, which he appears to unite with *P. serratus*. He has an equal number of narrow-leaved forms, viz. *P. compressus*, *P. gramineus*, *P. pusillus*, *P. pectinatus*, and *P. marinus*. Withering, in his 3rd ed. 1796, added one species to the above, *P. setaceus*, and this eminent author also throws some doubt on Dillenius's figure of *P. gramineus*, p. 150 of the 'Synopsis,' quoted by Linnæus, Haller, Hudson, etc., and which has always been re-

ceived by British botanists as an adequate representative of this species. The verbal description in Withering, p. 214, does not agree well with the figure so often quoted, and he suspects that there may be two species under one name, like two faces under one hood, viz. Ray's figure representing one, and the 'Flora Danica,' 222, representing another.

The accurate Lightfoot, after quoting the figure of *P. gramineus* in Fl. Dan. 222, with approbation, quotes Ray's, or rather Dillenius's, with the remark, "Non bene, quoniam sine stipulis" (not good, being without stipules), and adds that it agrees better with *P. compressus*, Loesel's Pruss. Flora, p. 206, fig. 66. This author gives good distinctive characters between *P. compressus* and *P. gramineus*, viz. that in the former the leaves are four or five times longer than the stipules, and that the spike produces only six small flowers. In *P. gramineus* the leaves are pointed, and about twice the length of the stipules, which are much larger than on the preceding, and the spike has fifteen or twenty flowers. It is to be hoped or wished that the ingenious author of the 'Flora Scotica' was describing plants or specimens, and *not* figures, when he drew up these admirable, plain, distinctive characters.

Sir J. Smith's 'English Flora' followed Withering's third and best edition at an interval of twenty-eight years; and in this excellent work there are thirteen species described, and five of these are of the grass-leaved, and eight of the broad-leaved kinds. Of the latter, *P. fluitans* (*P. rufescens*), *P. heterophyllus*, and *P. lanceolatus*, were new to the British flora, that is, had not previously appeared in any list of British plants.

There cannot be much diversity of opinion about Smith's species or those comprehended in his work, for he quotes 'English Botany,' the figures of which must necessarily agree with his descriptions; he also quotes the 'Flora Danica,' Curtis's 'Flora Londiniensis,' Loesel, Lobel, Gerard, etc.

P. compressus, Smith, is the same in Linnæus, the figures are Eng. Bot. 418, Fl. Dan. 203. About this there cannot be much doubt. The only figure quoted for *P. cuspidatus*, Schrader, is Loesel, 206, t. 66. Is this *P. acutifolius* of Link?

P. gramineus, it is to be feared, does not always in England represent the same plant; several Continental authorities give this name to another plant. Smith's description and reference

to Eng. Bot. t. 2253, ought to settle the nomenclature of this plant, at least in this country. *P. pectinatus* of Smith includes *P. marinus*, and probably *P. setaceus* and *P. flabellatus*.

In epitomizing the preceding history of the Pondweeds, the following results have been elicited:—First, that these plants were not separated from the marine Algæ by Theophrastus, the first genuine botanical author extant; second, that they were observed and distinguished both by Dioscorides and Pliny, who lived nearly four centuries after the age of Theophrastus; and it has also been remarked that both these ancient authors describe under the name of *Potamogeton*, *Polygonum amphibium*, and this has been the cause of much learned conjecture among their commentators, editors, and translators. Sprengel indeed quotes *Potamogeton serratus* as a synonym of *Tribulus aquaticus*, Theoph. iv. 11, but the description is far from being that of any *Potamogeton* whatever.

All British authors prior to Ray that have been consulted for this monograph, viz. Lobel, Gerard, Parkinson, etc., retain *Polygonum amphibium*: among the Potamogetons, a sure proof that their knowledge of these plants was not very profound. Ray also, in the earlier editions of his works on botany, retained the ancient arrangement, but he is the first British author who put the plant in its right place, viz. among the Persicarias, and asserted that it was not a *Potamogeton*.

The modern history of these plants may be further studied in the current works on the subject; it is only their ancient and mediæval condition that is embraced in this memoir. Something about their topography or distribution in the fresh or brackish waters of our Continent will be found in the sequel.

All the species that grow in Great Britain are more or less distributed in the inland waters of the Continent of Europe, and probably some of them are not uncommon in other parts of the world; and as the number of the species which grow in the British Isles has been doubled during the last twenty years, great accessions to this Order may be expected when the botany of other and remoter territories has been as successfully investigated as that of our native country.

As before said, they grow generally in deep waters, or in shallow waters where there is a considerable depth of mud. The only one not strictly confined to such localities is *Potamogeton*

polygonifolius, Pour., better known to English botanists by the name *P. oblongus*. This grows in moory marshes, or in grassy ditches in peaty places; and this, its place of growth, is possibly one of its best and most obvious distinctive characters.

P. natans is almost ubiquitous. Few ponds or deep waters are unornamented with its floating, olive-coloured leaves. The leaves vary considerably; sometimes becoming more elongate than in the normal or common form, and somewhat approaching to the lanceolate shape.

P. perfoliatus and *P. lucens* are pretty generally found in rivers and deep ditches, and in the South of England *P. densus* is a common species. *P. praelongus* and *P. plantagineus** are plentiful enough where they occur, but they are rare species compared with the foregoing. *P. heterophyllus*, *P. lanceolatus*, and *P. rufescens*, are by some, not without reason, regarded as problematical species. They may be placed alongside the floating form of *P. polygonifolius* and *P. lucens*; that is, they are about equally common, and equally indefinite or undefinable or undistinguishable.

The locality of the species will be found under their respective names.

Note. The Order, genus, and species are usually defined as under.

POTAMACEÆ.—The plants belonging to this Order are herbaceous, and of perennial or annual duration. Their stems are either cylindrical or very much compressed, either simple or branched, often throwing out rootlets from their joints, always submersed (under water). The leaves are either broad or narrow, usually of an olive colour and with their margin entire, linear, or with a more or less enlarged limb with prominent longitudinal ribs, or with a strong midrib. These primary longitudinal ribs or nerves are connected by a series of transverse secondary nerves, which are sometimes visible to the unassisted eye, and they are sometimes only to be seen when magnified. The leaves are mostly submersed, with occasionally, in some species, the uppermost floating; they are usually furnished with stipules, and are either sessile or petiolate (have leaf-stalks). They are usually alternate, but the uppermost are not seldom (*i. e.* in some species)

* This species or variety is very abundant in Ham ponds, or rather ditches, Kent, near Sandwich.

opposite. The stipules are sometimes united to each other and sometimes are joined to the leaf-stalk and form a sheath which embraces the corresponding branch of the stem. The flowers are in axillary or terminal spikes, or solitary or clustered in the axils of the leaves. The perianth consists of four herbaceous (not coloured) processes. *Note*.—This organ is not always present; sometimes, in *Ruppia*, for example, its place is supplied by a membranous spathe or sheath. The stamens are four, or only one, inserted at the base of the segments of the perianth. The anthers are sessile, (on long filaments in *Ruppia*,) with a more or less thick connective, opening by a longitudinal fissure. Ovary free, consisting of four carpels, each bearing one ovule. Pericarp coriaceous or fleshy. Seed with a membranous covering (testa) without albumen (consisting of the germen only). Embryo folded or rolled on itself. Radicle near the hilum or opposite.

POTAMOGETON.—The ordinal description almost defines this the principal genus of the Order. The flowers are all hermaphrodite or perfect; style very short, with a peltate (enlarged) stigma. The carpels are normally four, but often fewer by abortion. The fruit (carpels) are more or less beaked.

The principal genus, *Potamogeton*, may conveniently be separated into two groups or sections, viz. (1) the broad-leaved, and (2) the narrow-leaved species, or the Plantain-leaved and the Grass-leaved kinds. Each of these primary groups may be naturally subdivided into (1) coriaceous, or rather opaque or transparent-leaved species, leathery-leaved species, and (2) the pellucid or shining-leaved.

1. *P. natans*, Linn. The best-known and most generally distributed of the genus has round, striated, or slightly ridged and furrowed stems, which are as thick as strong pack-thread or about one-eighth of an inch in diameter. They are either, long or short, their extent depending on the distance between the surface of the water, and the bottom of the pond or other piece of water where they grow. From the joints of the stem either rootlets or leaves or branches are produced. These joints or junctions in the stem are furnished with scarious processes called stipules and sheaths; the former, viz. the stipules are from half an inch to an inch long, and lanceolate in shape, clasping the leaf-stalk; the sheaths are from three to four or five inches long, and clasp closely the branch or the fruit-stalk (peduncle).

The leaves, which are polymorphous (of many figures, from ovate to elliptical-lanceolate), are opposite, on either long or short stout foot-stalks; they have on the under side a prominent midrib, with three, four, or five less prominent lateral ribs on each side of the main one, which is the prolongation of the leaf-stalk.

The spaces in the leaf between the ribs are filled up by numerous secondary ribs more or less prominent, and the whole framework is bound together by a close network of short nerves or fibres, which appear when the fleshy part of the leaf is dissolved like a bit of very fine lace. The upper side of the leaves is flat; the margin is quite entire, and the apex, or top, is furnished with a short blunt point. The peduncle or flower and fruit-stalk is fully as thick as the stem, and is more or less tapering and of unequal length, but always longer than the spike. The spike is cylindrical, dense, one and a half to two inches in length, and the smooth fruit is furnished with a stout, lateral apex (point). This is the commonest of all the Pondweeds.

2. *P. polygonifolius*, Pourret,—*P. oblongus*, Viv.,—differs but slightly from the above. The chief distinctions are locality and size. It is the commonest *Potamogeton* of moory, moist, or springy places, and in shallow ditches, peat bogs, fens, etc., where the depressions are full of vegetation. Its colour is often reddish; its foliage is of a broader and shorter character, and the peduncles, spikes, and fruit are smaller than in the preceding species. It is *P. natans*, var. 2, of Dr. Withering's botanical arrangement. The excellent author of the 'English Flora' does not notice it even as a variety.

Note. These two species or varieties are easily distinguished when growing in their proper localities and in their normal state; but large forms of the latter, *P. polygonifolius*, when taken from deep ditches and ponds, scarcely differ from small forms of *P. natans*: in the herbarium they are barely distinguishable.

3. *P. plantagineus*, Ducroz, in some respects is more closely allied to *P. natans* than to *P. lucens*. Its leaves are broader than in *P. natans*, but not longer, and they are floating, or part of them appear above water; their colour is greenish-olive, and their longitudinal ribs are connected by more conspicuous, transverse, connecting nerves. Its spike is smaller, and it is besides a very rare species. It grows in many parts of Europe, from the Baltic to the Mediterranean.

Note. This species or variety is very abundant in Ham ponds, or rather ditches, Kent, near Sandwich.

4. *P. lucens*, Linn. This species has a very stout (thick) cylindrical, leafy stem. The leaves are elliptical, tapering at both ends, sessile or nearly sessile, ending in a small, short, sharp point; they are somewhat wider than those of *P. rufescens*, and not quite so long; their ribs, or nervation, or network, or frame, is like that of the above-mentioned. The stipules are large and winged. The peduncle increases upwards.

The colour is greenish with a tinge of red. The spike of fructification is dense and the fruit like most of that of the broad-leaved species. It is generally distributed over Europe.

5. *P. rufescens*, Schrader, is in some respects an intermediate species or form. It has a slenderer stem than *P. natans*, and a shorter spike; but it has not shining and pellucid leaves like *P. lucens*. It may be known from the former, *P. natans*, by its lanceolate leaves, which taper at both ends, and are either sessile or on short stalks which gradually dilate; the lateral ribs are connected by prominent tertiary, transverse (crossing) nerves: their colour is greenish and purplish, and they do not float on the surface like those of *P. natans*, but swim or are suspended under water like *P. lucens*. They are all uniform, and the stipules are not conspicuous, excepting those which subtend the peduncle.

This species is pretty general in Europe, being distributed from Norway to the Adriatic Sea.

6. *P. perfoliatus*, Linn. In several characters this species approaches *P. lucens*, viz. in having a round stem, pellucid leaves, dense fructification, etc. Its prominent distinctions are its ovate, sessile, clasping leaves, which are of a pale green colour and occasionally tinged with olive.

7. *P. praelongus*, Wulf, approaches *P. rufescens* in the shape and size, but not in the colour of the leaves, which are green, or green tinged with olive, and not pellucid. The stem is very long, being always (?) found in deep water. The peduncles and spike are like those in the foregoing, not always of the same dimensions, but varying with the size of the fruit.

8. *P. heterophyllus*, Schreber; *P. gramineus*, Linn.(?) Several authors,—Nyman, for example,—enter *A. gramineus*, Linn., as a synonym of *P. heterophyllus*, Schreber; and consequently the

nomenclature of two plants is thus rendered puzzling and ambiguous. It is not certain that Dillenius's figure, tab. 4, fig. 3, of his edition of Ray's 'Synopsis,' is a true representative of *P. gramineus*; but it is abundantly certain that it is not *P. heterophyllus*, Schreber.

The latter has the upper leaves *floating*, elliptical, tapering at both ends, on long leaf-stalks, green in colour, and as substantial as those of *P. natans*. The stipules are very long, and the lower leaves, if they be leaves, or if not, abortive branches, are narrow and cylindrical. The whole plant is slenderer than *P. natans*. It is more like an elongated form of *P. polygonifolius*. Its connection with *P. gramineus* is rather remote.

9. *P. sparganiifolius*, Læstadius, is one of our most recent additions to this genus. It has a long slender stem, not unlike the stem of the preceding, and it is also furnished with two kinds of leaves; the lower, like those of *Sparganium natans*, long, linear, and flaccid; the upper elliptic, lanceolate, on long stalks, tapering at both ends, like those of *P. heterophyllus* in shape, but narrower, and with a more open and delicate vascular organization. This is one of the rarest of our Pondweeds, and appears to be limited to the north of Europe.

10. *P. lanceolatus*, Sm. A specimen so named, *penes me*, i. e. *herbario in meo*, from North Wales, probably Anglesea; this has long, slender, cylindrical stalks, with few leaves except on the barren shoots; the lowermost leaves are nearly two inches long, elliptical or lanceolate, and very narrow, a little more than one-eighth of an inch in breadth; their consistency is like that of the pellucid-leaved species. The peduncles are very stout, and much longer than the leaves. The spikes are dense, and above an inch in length. The stipules are not above an inch long. *Note.* This agrees with Smith's description only in the foliage. (See 'English Flora,' vol. i. p. 283.)

11. *P. crispus*, Linn. This well-known and distinct species may be easily recognized by its crisp (wavy-edged), toothed, sessile leaves, which, though usually described as *lanceolate*, are oblong, not contracting gradually, but with an abrupt round apex; i. e. their margin is equally distant from the midrib from their base to their summit, and they are from two to four inches long. They are all submerged (under water), and their reticulation (network) is not so close or regular as in the above-described

species. The spikes are short, lax ; fruit with a slightly curved beak, which is about as long as the fruit. A very common species, both in deep and shallow water.

12. *P. serratus*, Hudson, is by some descriptive authors entered as a variety of *P. crispus*, and by others as more fitly belonging to *P. densus*. Smith's description of *P. crispus* agrees better with this variety than it does with the common form. He besides tells us, that Clusius' figures, Pan. 713, f. 714, 715, in Johnson's emaculate (not immaculate) edition of Gerard's 'Herbal' is annexed to a description of *P. densus* !

P. serratus has lanceolate, serrated, sometimes crisp leaves, not above two inches long, oblong-lanceolate or lanceolate. It is not an uncommon form.

P. densus, Linn. Stem cylindrical, rather stout, more or less branched, very leafy. Leaves opposite, ovate-lanceolate, sessile, entire, pellucid, all submerged. Peduncles slender, short ; spikes few-flowered ; fruit compressed, with a short terminal beak and a prominent keel. Not rare in the south of England.

Note. It is hoped that during the ensuing season materials may be collected or contributed to furnish forth the second part of this monograph.

BOTANICAL INTELLIGENCE.

"Society of Amateur Botanists."

A circular with the above-written heading has been recently sent to our office, and we gladly embrace this earliest opportunity of trying to promote its circulation.

Co-operation, or the principle of associated efforts, in the advancement of knowledge, has always been strenuously advocated in our pages ; and we have several times proposed the Natural History Societies in Glasgow, Todmorden, and Warrington as models which might be imitated with success, especially in London, which is the metropolis of science as well as the emporium of commercial business.

This new candidate for scientific reputation is confessedly a great desideratum, an institution much wanted. Its location is 239, Euston Road. As our readers may not be profoundly read or learned in the modern geography and nomenclature of the streets

of London, we beg to inform them that what is *now* called EUSTON ROAD cannot be very far from St. Pancras New Church, Euston Square, nor very distant from the terminus of the London and North-Western Railway,—both cardinal points of London topography.

The object of this new society, as is well expressed in the circular, is to assist the members in the study of British plants, by organized excursions, by exchange of specimens, communication of papers, the formation of a herbarium, library, etc. etc.

The estimated cost of these great objects may be very moderate: for example, the members may soon collect a herbarium, which will cost them no more than the paper in which the specimens are kept, or on which they are mounted; excursions will cost nothing, and botanical communications may be had equally cheap; and a hundred half-crowns judiciously expended every year will soon purchase a good botanical library.

The contributions or payments of the members are on the lowest possible scale, viz. half-a-crown for entrance and the same for the annual subscription.

It is gratifying to hear that the promoters are actuated by so liberal a spirit. Their moderation guarantees success to the new association. The cost will not deter any botanist from enrolling himself as a member of a society which is to be conducted on so economic principles.

Their society will not go to pieces like the defunct Botanical Society of London, which split and foundered on the rocks of extravagance, conceit, and mismanagement. The half-crown entry-fees and the same amount of yearly payments will not tempt the society to ornament their council chamber with oil paintings of the leading or influential members. One hundred or even two hundred half-crowns would not go far in paying the artist's bill for portraits of the president, vice-president, treasurer, secretary, and curator and other patrons of the society.

Such a society as this supplies, as has been stated, a real want. The former society, which was founded about thirty years ago, did good service to the amateur members of the fraternity, and if it had not fallen into the hands of incapable managers it might be in active operation at this day.

We will not take the liberty of lecturing the members of the new association, though in past times our attention has been often

turned to these matters; and our experience of their utility has always induced us to recommend them strenuously, and to render them all the material help and encouragement which our circumstances and avocations permitted. The infant society is hereby assured that their proceedings will be observed with much interest, and that the success of the undertaking will be most gratifying.

Of their success there can be no question, if they can only agree to help each other, even although they do not *all* implicitly believe in Professor Babington, nor pin their botanical faith on the sleeves of Mr. Bentham. As the ancients said, small states become great by concord, while, on the other hand, selfishness and animosities ruin the most powerful empires.

By walking in the ways of peace and charity, by avoiding *clique*-ism, and seeking only the edification of each other, a small association may accomplish great objects, may provide a continuous supply of healthy mental pabulum for its members, and may ultimately have the honour of enlarging considerably the domains of science.

We had almost forgotten to state that the president, M. C. Cooke, offers as a prize for the best collection of British Mosses, Berkeley's work on the same family. The secretary, T. Martin, 10, Great Turnstile, Lincoln's Inn Fields, W.C., will furnish particulars both about the competition and the society. We wish they may get a hundred competitors for this prize. We are pretty confident that they will get many members to their society.

NOTES OF A BOTANICAL TOUR IN BANFFSHIRE.

(Continued from page 444.)

Tuesday morning broke in clouds, yet the day bade to be fair. Wofully, however, were we disappointed. A guide for Loch Avon was got, and provisions for two days were made ready by Miss Smith. Our road lay through the hills, and along the banks of the Ailnach. The distance between Tomintoul and Loch Avon is said by some to be eighteen miles, but you must bear in mind they are "Highland" miles. On a bank by the roadside, as you descend to the bridge over the Avon at Delnabo, we meet with *Gnaphalium sylvaticum*, one of the Cudweeds, "Everlastings,"

Antennaria dioica (Cat's-foot), of the same family. *Orobis tuberosus*, one of the Pea tribe, with tuberous edible roots, was also found. It is plentiful also over most of the county *Gentiana campestris*, common Gentian,* one of our prettiest plants, was plentiful.

In the same spot we met with another beauty, *Trientalis europæa* (Chickweed Winter-Green). It is abundant in most parts of the county. We have gathered it in the Tor of Troup, on Gamrie Mhor, in Alvah, on the Knock, in Grange, on the Balloch, in the wood of Dinneyduff, near Keith, and around Loch Park. It is rare in England, and does not grow further south than Yorkshire.

Beside the bridge of Delnabo, grew *Cardamine sylvatica* and *Saxifraga aizoides*. The bridge crossed, we reach a Land of Goshen to the botanist. The first plant that presented itself was the beautiful *Cnicus heterophyllus* (Melancholy Plume-Thistle). Beside it grows the rare plant *Listera ovata* (Twayblade).

Geraniaceæ are here represented by *Geranium pratense* and *G. Robertianum*. The former has large blue flowers. It grows rather plentifully through the district. The latter has a small flower. It is named *Robertianum* from St. Robert, a Benedictine monk, abbot of Molesme, who died in 1100 A.D. His anniversary is on the 29th of April, and as this plant is then beginning to come into flower, it was dedicated to this saint.

The Lint family has its representative at Delnabo in *Linum catharticum*, at times employed in medicine, and said by some to be deserving of a higher place than it occupies. Here, too, we first met with *Alchemilla alpina*, although it grows at much lower elevations, and also in the lower districts. There are three species of *Alchemilla* that grow in this district:—*A. arvensis*, a small plant found everywhere in cultivated fields, *A. vulgaris* (Common Lady's-Mantle), and *A. alpina*.

Another genus of the Rose family grows at Delnabo, *Rubus saxatilis* (Stone Bramble). It creeps along the ground, has a somewhat prickly stalk, white or yellow flowers, a red berry with a stone as fruit. *Rubus fruticosus* (Bramble) is well known. Its fruit makes a most agreeable preserve. On the hills almost everywhere will be found *R. Chamæmorus* (Cloudberry). It has a large berry as fruit, first red and afterwards yellow. *Rubus* is from the Latin *ruber*, red, or the Celtic *rub*, red. *R. fruticosus* is the badge

of the clan Macnab; *R. Chamæmoris*, that of the Macfarlanes. *Solidago Virgaurea* (Golden Rod) was also found here. It grows in a single stalk from one to two or three feet high, and terminates in a long cluster of yellow heads. It is named *Solidago* from *solidari*, to unite, because of its vulnerary qualities. Among its other properties it is said that "the decoction also helpeth to fasten the teeth that are loose in the gums." *Stachys sylvatica* (Hedge Woundwort) is also found at Delnabo. Two others grow in the district, *S. palustris* and *S. arvensis*.

With the above, Delnabo was "done," so far as we could see, and we went on our way rejoicing—the wilderness now before us. Delnabo is the last house, except three huts, in the direction of Loch Avon. The route lies along the hills, between which the Ailnach runs, and the hills rise at once from the Avon side. For eight or ten miles, the Ailnach flows between banks two or three hundred feet high. At some places, they are of a bluish colour, and slope gently backwards; at other places, they are of a yellowish hue, caused by the disintegrated quartzite; and, at other places, the rocks of clay-slate, here and there with a cave, rise right up from the bottom of the river bed at least three hundred feet. One sees the stratification of the rocks well. They mostly dip S.E., and consist either of clay-slate, part of the new gneiss, or of the quartzite. In ascending from the Vale of the Avon, we meet for the last time with *Helianthemum vulgare* (Common Rock Rose). The stem is procumbent and shrubby. The flower is yellow. The stamens, when touched, spread. It grows at Gamrie, the Burn of Melrose, and the Old Castle of the Boyne.

We had not much more to look for till we reached the higher ranges, and we set out in good earnest, over, at first, ground that had once been cultivated, but is now thrown into sheep-walks, and, after a little, over heather, peat, and bent, with the river on our left, dashing along nearly black in colour from the heavy rains, and reminding one of Dante's *acqua tinta*. In "moving on," we had our eyes about us, and we picked up *Carex pilulifera*, *Pedicularis sylvatica* (Lousewort), *Polygonum viviparum*, and a few other common plants. A little above Delnabo, the common Whin disappears, as well as *Carduus lanceolatus* (Bur Thistle). We met *Listera cordata*. Of the Ferns, we marked *Polypodium Dryopteris* (Oak Fern), *Blechnum boreale*, *Lastrea dilatata* (Shield Fern). In a small ravine, the first

passed, we found *Saxifraga stellaris*—a plant that grows in abundance on most of the hills. It belongs to the Natural Order *Saxifragaceæ*. The genus is so named from its supposed power in curing the disease of the stone, and the name means “the stone-breaker.” One, a native of England and Ireland, is grown in this country in gardens, *S. umbrosa* (London Pride, None-so-pretty). (*S. granulata*), *S. hypnoides* (Lady’s Cushion), *S. azioides*, and *S. oppositifolia* grow in the county—the last growing only on the highest hills, and on rocks by the sea. Another genus of the same family, containing two species,—one rare, and the other plentiful,—grows in the county. The species are *Chrysosplenium alternifolium* (rare) and *C. oppositifolium* (Golden Saxifrage). The latter is used in the Vosges as a salad, under the name of Cresson de Roché.

In several boggy places we lighted upon *Epilobium alpinum*. We have gathered the same plant on Belrinnes. A somewhat rare plant is found, *Melampyrum pratense*, with the variety *montanum* (Cow Wheat). All along were growing *Juniperus communis* (Juniper), “Aitnach;” *Empetrum nigrum* (Crowberry), “Knowperts;” *Vaccinium Myrtillus* (Blaeberry); *Vaccinium Vitis-Idææ*, and *Arctostaphylos Uva-Ursi*. *Vaccinium Vitis-Idææ* is the badge of the clan Macleod, and *Empetrum nigrum* is that of the clan Maclean.

Mile after mile passed away, and we reached a bend of the river, and the scenery changed. There was nothing now before us but a wide, peaty, benty moor, wet as a sponge, and cut up by the water into hollows and ruts, leaving hillocks of peat between—the most fatiguing kind of ground to walk over. Our course still lay along the low banks of the river. Nothing was to be seen but the rounded hills behind us, gently rising on either side backed on the left hand by high hills, with Ben-na-Bynach in front of us, as if the guardian of the desolate hollow. The clouds, that had looked heavy, now began to give forth their contents. Yet a thought of returning never entered our minds. We crossed the Ailnach, and struck through a heavy piece of peat-bog, leaping from hillock to hillock, to a shepherd’s bothie. These bothies are somewhat primitive in their construction. The couples are placed first, and on the ground, with uprights about four or five feet high. The wall is then filled in between the uprights with big stones; and outside the stones is built another wall of turf.

It is then covered with "divots," except a hole in one end, to allow the smoke to escape. The floor is "mother earth." It has seldom any door. The shepherd hangs up his plaid during night against the doorway. Part of the roof of the one we entered had fallen in. By the time we reached it, we were wet, soaking wet, and stood in need of a little rest. But there was no landlord. Our hearts fell, as we sat dripping with moisture. The corners of the apartment were piled with the roots of trees that had been gathered from the bog, and can you blame us if we soon had a blazing fire? Looking more narrowly, we discovered a little box. Curiosity was aroused. We were out on an "exploring expedition," and why not see everything? It was opened, and proved to be the commissariat! A cooking utensil was lying before us. A box of coffee was looking up from the small chest, and seemed to say, "You would be none the worse for a little." We fancied it spoke thus. Remember, there was no landlord. We did not think of Sheriff Gordon and "the Blues," but we thought of Rob Roy, and in the twinkling of an eye we were deep in the mystery of coffee-cooking. Remember, there was no landlord, and the Blues were invisible. We sat and warmed ourselves, and regaled ourselves with the "Good Samaritan's" coffee.

(To be continued.)

Reviews.

The Chelmsford Chronicle.

The following extracts from this paper, kindly sent by one of our correspondents, will gratify all our metropolitan botanists. A very laudatory review of Mr. Gibson's 'Flora of Essex' has already appeared in the 'Phytologist,' and therefore it would be superfluous to quote this paper wherein its merits are further recorded.

The following notices about the wild flowers of Essex, and the places where they are to be found, are well worth extraction:—

"*Bupleurum falcatum*, strictly an Essex species, is particularly interesting, as it is impossible to mistake as to the identity of the plant when found, or to blunder in endeavouring to find it, for it grows on both sides of the road for about a mile, at the distance of five or six miles from

Chelmsford, on the way to Ongar, and it is nowhere found in England except in that neighbourhood."

We hope that the following prediction may soon be a *fait accompli*, and not a future event, as all predictions necessarily are :—

"The appearance of the volume we are considering is a good omen, and if it is received with the favour it deserves, we shall soon see a second edition, with additions. For, notwithstanding all the endeavours of its author to make the work complete, and notwithstanding the assistance of fifty gentlemen, who have contributed more or less to it, there is still a list of fifty-seven plants which are supposed to be natives of Essex, but are not recorded as having been found there. We are much mistaken if we have not seen two or three of them a few years back, and intend, now we know how rare they are, to keep a good look-out for them.

"*Cicuta virosa* was contained in the beautiful collection of wild flowers exhibited by Miss Marriage at the Exhibition of the South Essex Horticultural Society in June, 1859; we believe it was gathered in the neighbourhood of Danbury. Poisonous plants like this are happily become very rare in the county. Cultivation of its fields, and the diminution of woods, doubtless have done much in altering its botanical features. Thrift Wood, in the neighbourhood of Chelmsford, formerly rich in rare plants, is no longer what it was, and what is left of it can hardly be traversed by a botanist, unless he is prepared to face a man with a gun, who will order him off the ground with a threat of prosecution if he venture there again. It is commonly believed that any cause which is prosecuted will prosper, and perhaps it would awaken a zeal for botany if some enterprising young gentleman were to be sent to gaol for gathering flowers in Thrift Wood. Daffy Wood, on the contrary, is so much frequented that every Daffodil is plucked as soon as it is in bloom, and *Helleborus viridis* is likely to be lost. Indeed, we could not find it there in 1861, though we saw it the year before. We suspect, nevertheless, that some plants may be found in the Chelmsford district, which are not recorded as belonging to it in the work before us. *Tragopogon porrifolius* grew abundantly for some years on a bank which formed the approach to a bridge over the railway, on the road to Writtle, out of the London Road, Chelmsford. It was found there in 1858 by E. Copland, Esq., who brought it to the botany class which then was held in the Chelmsford Institute. Of eight species of *Ranunculus* formerly confounded under the name of *R. aquatilis*, only one is recorded in the Chelmsford district. But there is a lane at Great Baddow which contains two; the flowers in the pond on one side of the way being evidently distinct from those in the ditch on the other. When we consider, however, that this is the first edition of a

work, the like to which has not appeared before, we rather wonder at its approach to completeness than at its being capable of improvement."

The Preston Chronicle. October, 1862. *Rambles by the Ribble.*

Sorry are we that there is no room for the lively, amusing descriptions of the scenery about Ribble Head, with the quaint lines from Drayton, an especial favourite of the writer's. The continuous bacon-and-egg breakfasts, dinners, and suppers, extending over long periods, would possibly cause the features of our southerners to relax into a smile; we would certainly enjoy the change, for chops and steaks are no rarities here; but a savoury rasher of ham or bacon well broiled with eggs—or perhaps it should be fried (we are not profoundly skilled in the mysteries of Yorkshire cookery)—would be a feast, for we know by experience that the viands there are toothsome and good; but fourteen breakfasts, etc., on ham and eggs, might put our liking to a sore trial.

For our part, we should like to read a specimen or example of "chaffing" with Austwick Carles. The Austwick tales, and the legends of the Clapham folks, we hope to see in a fitter vehicle for their transmission or circulation than is now at our disposal.

"In some of the later rambles there has been nothing noteworthy in botany. On this occasion we were more successful. In the meadows in the neighbourhood of Thorns Gill we found many interesting plants. The Globe-flower (*Trollius europæus*), the Bird's-eye Primrose (*Primula farinosa*), and Water Avens (*Geum rivale*) were abundant; the Frog Orchis (*Habenaria viridis*) and the Twayblade (*Listera ovata*) were frequent, and the generally scarce small White Orchis (*Habenaria albida*) almost equally so. In one meadow there was a great quantity of the Dark Plume Thistle (*Carduus heterophyllus*), which plant we also found near Horton, in Ribblesdale, from whence it was sent at the end of the last century, to Sowerby, by a Mr. Bingley. The Wood Crane's-bill (*Geranium sylvaticum*) was also abundant. The great Bistort, or Snake-weed (*Polygonum Bistorta*) we saw in many places, as well as the giant Bell-flower (*Campanula latifolia*), the last, of course, not yet in blossom. At Lynn Gill we made no botanical discoveries worth recording. We had not been long on Moughton before we saw we had got into a rich botanical district. The first plant of note that we met with was the Alpine Bistort (*Polygonum viviparum*) growing plentifully below Coom-Combs, or Culms Quarry, as it has been variously spelt. This is doubt-

less the spot from which Mr. Bingley sent the specimen of the plant to Sowerby, which is figured in 'British Botany,' and which is stated to have been 'communicated fresh from a moist spot of ground a little below the Culms, near Horton, in Craven, by Mr. Bingley, in July last' (i. e. July, 1799). In the same neighbourhood also grew the Cat's-foot (*Gnaphalium dioicum*), plentifully and luxuriantly. A little higher on the face of the hill we met with abundance of the common Rock Rose (*Helianthemum vulgare*) the Salad Burnet (*Poterium Sanguisorba*), the Milkwort (*Polygala vulgaris*) in all its varied hues, and the common Thyme (*Thymus Serpyllum*). In wet places, and by the sides of springs, were abundance of the Bird's-eye Primrose, the Butterwort (*Pinguicula vulgaris*), the Forget-me-not (*Myosotis palustris*), two or three kinds, the Marsh Valerian (*Valeriana dioica*), and the Wood Pimpernel (*Lysimachia nemorum*). In the woods and thickets we observed the Mountain Ash, or Rowan-tree (*Pyrus Aucuparia*), the yellow Cow-wheat (*Melampyrum pratense*), the Sweet Woodruff (*Asperula odorata*), the Wood Sanicle (*Sanicula europæa*), the Earth Nut (*Bunium flexuosum*), and the Bittercress (*Cardamine amara*). On rocks and banks, in open places in the woods, the Hairy Wallcress (*Arabis hirsuta*) was plentiful; and in one place we observed a quantity of the Hemp Agrimony (*Eupatorium cannabinum*). On the scars grew several of the Hawkweed tribe (*Hieracia*), as yet in an immature state; the Kidney Vetch (*Anthyllis vulneraria*), the Wall-rue Spleenwort (*Asplenium Ruta-muraria*), the Black Spleenwort (*Asplenium Adiantum-nigrum*) occasionally, and the Toothed Bladder-Fern (*Cystopteris dentata*). On the top of the hill there was abundance of the blue Moor-grass (*Sesleria cærulea*), and occasionally the Spring Sandwort (*Arenaria verna*), and also a few plants of the Savin-leaved Club-moss (*Lycopodium alpinum*). Near the foot of the hill where we descended is a solitary farmhouse, and at a short distance from it is a magnificent Sycamore-tree, the sight of which would well repay a divergence from the high-road, even to the tired pedestrian.

"We did not do anything at Swarthmoor in the botanical line beyond noticing several specimens of the rare Hairy Stonecrop (*Sedum villosum*) just coming into blossom. Perhaps it would not be out of place here to notice that when, on a previous occasion, we had gone to Settle from Horton, we saw, on a waste spot of ground, in the village of Little Stainforth, the Welsh Poppy (*Meconopsis cambrica*), and the spotted Dead Nettle (*Lamium maculatum*). Near them grew abundance of 'Good King Henry,' or Wild Spinach (*Chenopodium Bonus-Henricus*), and on old walls of the village the shining Crane's-bill (*Geranium lucidum*) was extremely luxuriant and plentiful, and the before-mentioned Hairy Wallcress was frequently to be seen."

BOTANICAL NOTES, NOTICES, AND QUERIES.

VINCA MINOR.

Allow me to call the attention of your readers to the inflorescence of *Vinca minor*. It is a plant with which I have no doubt they are familiar, and as it will flower in the ensuing month, there will be an opportunity for the observation of its peculiarities, which are characteristic and interesting. The flowers are usually said to be solitary and axillary; but in a paper which I communicated to the British Association for the Advancement of Science, and which was read at their Cambridge meeting in last October, I ventured to express an opinion that the flower of this plant is truly terminal. My reasons for this opinion are as follows:—*Vinca minor* has opposite leaves, but the flowers are not opposite like those of *Anagallis arvensis*, which are truly axillary. Sometimes, instead of a pair of opposite leaves, there is a solitary leaf, and then the flower, instead of appearing in its axil, is uniformly on the opposite side of the stem; but A. P. De Candolle says that "inflorescences opposite the leaves appear to be always formed by the real top of the stem." Professor Balfour has also shown that this is what takes place in the Vine, of which a peduncle or tendril is the true summit, and the branch which is prolonged beyond it proceeds from the uppermost axillary bud. That such is also the case with *Vinca minor* I have no doubt, having indeed seen a plant some years ago in which the flower was evidently terminal, having a branch on both sides of it. If practical botanists will only look out for similar variations, I have no doubt that they will be able to verify what I have said.

JOHN GIBBS.

Baddon Road, Chelmsford, 6th January, 1863.

POGLES, OR COWSLIPS. VERBASCUM. (*Culverkeys*.)

Dr. William Bullein, in his 'Book of Simples,' written 1562, says: "*Verbascum* is of divers kinds. The one is called Mullen, which is a long herbe like a wax-taper, bearing yellow flowers in the top, with small leaves. Another kind, black *Verbascum*. These herbs be called Dung-worte among the common people. The third kind is called Pogles or Cowslips."

In a note given in the 'Phytologist' some time since, reference was made to Culverkeys, noticed by Izaak Walton, being gathered with Cowslips. If by Culverkeys he meant what we call Columbines, might he not by Cowslips have meant the *Verbascum* alluded to by Bullein? S. B.

JOHN-IN-THE-POT. (*Herb John, etc.*)

In J. Howell's 'English Proverbs,' published 1660, is the following: "Without Herb-John no good pottage."

In Osborne's 'Memoirs of James the First,' he has a phrase, "To exchange Herb-John for Coloquintida." Tomlinson, in his translation of Renodæus' 'Dispensatory,' says that many superstitious persons call Mugwort St. John's Herb, "wherewith he circumcised his loyns on holidays." This does not agree with the herb John-in-the-Pot of Gurnall, before noticed in the 'Phytologist.'

There is a curious note by Dr. Grey, in his edition of 'Hudibras,'

JOHN IS

which refers to Jean-Pottages as follows:—"A Buffoon, or Jack pudding. In France he is called Jean-Pottages; in Italy, Mocarome; in Holland, Pickled Herring, etc.;" and he says, Mr. Theobald, in one of his notes to Shakspeare's 'All's Well,' etc., observes, "that it was a foolery practised at city entertainments whilst the Jester or Zany was in vogue, for him to jump into a large deep custard, put on purpose to set on a quantity of barren spectators to laugh." S. B.

Sir,—It may interest some of your readers to know that that really magnificent plant *Saponaria officinalis* still grows in great profusion on the wide beach near Langley Fort, Eastbourne. This is mentioned in Turner and Dillwyn (1802), so that this plant, if not really native, has now maintained its ground for at least sixty years, and may fairly be considered naturalized at all events. *Phyteuma orbiculare* is plentiful on the Downs, towards Beachy Head. T. W.

If there be a doubt about the genuineness of the white variety of *Campanula Trachelium*, let me give evidence in its favour. I have often seen specimens of the white variety of this plant growing wild, with the typical form, in many different places at Shiplake, near Henley-on-Thames. It has occurred to me that the chalk soil has something to do with this: as, in the same neighbourhood, where chalk and clay meet, the first is decorated with Violets of all kinds, purple, blue, white, and rich claret-coloured, while the clay produces any but the common purple.

St. Peter's College, Westminster.

MECONOPSIS CAMBRICA AND ANGELICA OFFICINALIS, NEAR SETTLE.

When I was botanizing in Settle, upwards of ten years ago, the first-named plant, viz. the Welsh Poppy, was observed about the roadside, at the village of Stackhouse, and a little further on, a couple of plants of the garden *Angelica*, at Stainforth. Between Stainforth and Horton, the old stone dykes and the cottage roofs were adorned with *Meconopsis cambrica*.

ALIQUIS.

Communications have been received from

John Sim; John Peers; J. Britten; Dr. Windsor; W. Robinson; S. Beisly; W. G. F. Phillimore; James Lothian; T. Stansfield; J. S. M.; M. A. Walker; F. P. Marrat; C. J. Ashfield; W. Winter.

RECEIVED FOR REVIEW.

James Lothian's Spring Catalogue.
The Preston Chronicle, Feb. 21st.

ERRATA.—Page 418, line 16, place a full-stop after 'spontaneous'; line 21, omit comma after '*E. portlandica*'; line 25, place a full-stop after '*E. variegatum*,' also after '*subrepens*.' Page 419, line 27, after 'shown' insert 'me'; line 36, for 'Powell' read 'Nowell'; line 39, for '*catophyllum*' read '*calophyllum*'; last line, for '*Kneipfli*' read '*Kneiffli*.' Page 420, line 1, for '*amplyodon*' read '*amblyodon*.'

BOTANICAL LETTERS FROM ARGYLESHIRE.

A Run to the Top of Glenramskill. By JAMES LOTHIAN.

"I stand upon my native hills again,
 Broad, round, and green, that in the summer's sky,
 With garniture of waving grass and grain,
 Orchards and birchen forests busking lie;
 While deep the sunless glens, and scooped between,
 Where brawl o'er shallow beds, are streams unseen."

W. C. BRYANT.

Lovers of the country alone can sympathize with the botanist who in the first fine week of March or April takes down and dusts his vasculum, looks at the suburban map of London, and consults Bradshaw, or, what is better, the time-tables issued by the respective railways which have their *termini* in or near this great metropolis. His prospective pleasures are to be felt, not described.

Our excellent and imaginative correspondent, the author of the "Letters from Argyleshire," asks a question which we will answer, without the formality of stating what it is.

In the fine days of March, in our youth,—when in the famous university, where Dugald Dalgetty studied the humanities, and where he complained of short commons, but not of a want of mental pabulum,—youths sometimes *trowed* the Greek class, liking a game of golf on the broad links more than the wisdom of Socrates, the descriptive simplicity of Xenophon, and the spirit-stirring eloquence of Demosthenes and Æschines. Our lively friend is hereby informed that if we could not leave home, and our avocations also, with a good conscience, or without leaving undone any service of obligation, or the relinquishing of any work of mercy or charity which we could bestow on ignorant or suffering humanity, our rural or botanical excursion would do us no good, but we should be haunted with the harassing conviction that we were not in the right place, and we could neither enjoy the finest scenery nor the richest flora in the wide world.

Our readers, if they condescend to take our counsel, will do well to consider, before going out to admire the beauties of Flora, whether or not this is compatible with a due regard to the fulfilment of their necessary social and domestic functions.

When they are at liberty from these ties, they may go where

the "Grass is greenest, and where the Lady-fern grows *sheenest*," as Scott or some other minstrel of nature sings. The botanist may then safely air his botanizing habiliments, and ventilate his cogitations and aspirations about the beautiful and the good.

But we are always ready to accompany in spirit all who take delight in the contemplation of nature's charms; and our excellent correspondent is now to be introduced, to tell his observations, reflections, and enjoyments in his own graphic way, as with staff in hand and vasculum on his shoulders, leaving Campbelltown, he directs his course by the seawardside road, skirting the beach southwards, and has evidently made up his mind to reach the spring at the top of the hill beyond Glenramskill, some three or four miles distant. On reaching Kilkerran bridge he strikes off to the right, past the farmhouse, through the stile beyond, and he is now on the Moor Road, a mere bridle-path, surrounded with Heath and forests of Whin (Gorse) and Broom, emitting their clouds of perfume, and the mellow notes of nature's melodists. The sun now sheds its light and heat, insects of all sorts add to the chorus of joy that greets his ear on every side as he ascends this glen, deviating now and again in zigzag directions in quest of plants, most of which, however, are of common occurrence, as *Parnassia palustris*, *Anagallis tenella*, *Cardamine pratensis*, *Pinguicula vulgaris*, *Pedicularis palustris*, *Eriophorum angustifolium*, *Empetrum nigrum*, *Scabiosa succisa*, *Polytrichum commune* in immense masses; Sweet Gale, the little Eyebright, *Euphrasia officinalis*, large patches of the pretty *Lotus corniculatus*, *Galium verum*, *G. palustre*, *G. saxatile*, and a host of others too common and numerous to mention. In his deviations proceeding up the glen, he had gone a short way off the path to examine one of our umbelliferous plants, the *Cicuta virosa*, growing in a damp hollow, beside a small grassy rivulet, — a plant possessing poisonous properties, by eating the roots of which, mistaking them for parsnips, several of the men belonging to one of her Majesty's men-of-war lost their lives some years ago at this very spot. In returning again to the path, he had to pass through a small thicket of *Salices*, *Alnus glutinosa*, etc., through which no sooner emerged than our rambler was face to face to a large black Highland bull, with horns at least a yard asunder. He stood confounded, as did the animal for a few moments, looking at each other; recovering himself, however,

at a moment before the animal, he pulled from his pocket a small German musical instrument, sounded it aloud in all its variations, when the bull, as if cowed and frightened, took to his heels with some half-dozen cows, with tails erect, never looking behind until they got among some trees and brushwood at the bottom of the valley. Our pleasure-seeker and botanist hastened with all speed to gain the top of the glen, which as he reached, he sat down on a bank to have a full view of his enemy, which now, as if ashamed of his cowardice, had come out of the thicket, and was roaring and bellowing, and tearing a mound of earth with his horns, lifting his head now and again, and taking a long look towards the top of the valley, where our friend was now seated, quite composed, rather thankful that he had escaped a bull-fight, and now enjoying a magnificent view as well as a refreshing breeze. Right before him was the Campbeltown harbour, with all its shipping, and villas skirting its north bank, with all the undulations and variety of hill, dale, and homesteads beyond, as far as the distant mountains of Cowal, as also the Sound of Kilbranson; the island of Arran itself, a splendid field for either botanist or geologist, as well as the dark, heathy hills of Glenlussa. The sun was high, and the day now warm, while the beautiful sky above presented pure serenity itself. Our hero could not get the effect of his instrument on the bull out of his head. It was so sudden as to be more a matter almost of instinct. The effects, however, of sounds upon insects and animals is sometimes as varied as the sounds themselves. It is something on this principle old apiarians used to beat a girdle or a tin vessel, with the view of stopping the flight of bees hiving, —whether with effect in that respect I cannot pretend to affirm.

Our Rambler had now rested himself, and saw that he was quite beyond the reach of his adversary, who seemed now to have expended his rage and fury on the mound of earth; so rising from his seat, he was soon on the ridge of the hill, leaving Glenramskill in the rear, and treading on new ground, moor, heath, and bog. He felt buoyant and light, and although the day was warm, the cool mountain-breeze tempered the heat of that summer noonday. He shortly reached a conical knoll covered with heath, forming the highest spot at that point; and as he stood to breathe for a few moments, he was captivated by the expansive river and scenery now before, bounding in the ex-

treme distance on the brown hills of Antrim, with the coastline from beyond Rathlin down below Belfast, as well as the Scotch coast of Galloway and Wigtonshires, the Irish Sea and North Channel, and the extremity of the Firth of Clyde, where Ailsa's lone craig sits in solitary grandeur, lashed by the ocean waves. Numbers of ships, with their snowy sails, are boated outwards and inwards, with several large steamers, one of which he recognizes as the 'St. Andrew,' North American steamer, passing up the Sound of Sunda for Glasgow. Among the hills and valleys more immediately beneath him, he hears the joyous sounds of rural labour and rustic toil. Sheep are browsing around him, and a covey of birds hastens past, intent on escaping the sportsman's rifle, now and again heard sounding from glen, heath, and corrie,—perhaps the first and public day of the sportsman, the memorable 12th; but what are they all, compared to that beautiful bird the lark, whose song, as it ascends and descends over that bog, rivets to the spot?

The spring is reached. There it is, an oblong orifice, something about three feet by two wide, in the face of that grey rock, shaded by Heath, its sides and roof green, beautifully green, by an embroidery of nature's workmanship, clad with one or two *Bryums*, *Marchantia*, and *Chrysosplenium*, while a small eye of pure clear water flows on continuously.

“The mountain air
In winter is not clearer, nor the dew
That shines on mountain blossoms.”

Cold as ice, clear as the purest crystal, there it rolls out continuously into a small basin-like cavity with pebbly bottom, a blessing to the wandering naturalist, or whoever may chance to tread afar on this distant mountain-top,—never dry, ever cold, and refreshing summer and winter. No stagnation is here. The water rises to its level, and the water flows onwards, trickling down the *brae*, or inclined, if you please, in form of a fan, spreading as it reaches a bog some thirty yards distant; while every inch of the ground over which this waste water spreads, is ever in one mass of verdure.

Our friend, buckling on again, commences to search in its tract on to the bog, where he meets *Veronica Beccabunga* and Watercress in great profusion; *Cardamine*, *Polygala*, *Polytrichum*, *Sphagnum*, *Hydrocotyle*, and as he reaches the little bog, Nar-

thecium ossifragum, *Drosera rotundifolia*, and *D. longifolia*; but time getting on, he wheels round, and turning to the left he passes to the spring again, making, in an eastward direction, along the ridge of the hills towards Kildalloig shore. A little beyond the spring, he halts to examine the long wreaths of *Lyco-podium clavatum* among the heather, and some beautiful patches of the *Calluna vulgaris alba*, with its snowy blossoms and light-green foliage. In a small marsh between two conical knolls, he meets the *Menyanthes trifoliatus* and *Comarum palustre* in immense quantities, the former one of the most valuable plants in the British Pharmacopœia; but resuming his steps, he soon reaches Kildalloig Glen, and the shore,—a spot by far too important to talk about on a mere hasty ramble, we must devote a regular field-day to it. Suffice it to say in the meantime that our botanist picked up here *Asplenium marinum*, *Hymenophyllum tunbridgense*, and Corn Cockle abundantly in a field at hand, with many other pretty forms. But time and tide wait on none; pulling out his timepiece, he finds he must bid good-day to those thousands of nature's lovely things, and make once more for town, for duty and business, which he reaches, charmed by the linnet's song, refreshed by the fragrance of the wild flowers, delighted by the beautiful appearance of the sun's rays, as dipping in glory in the great Atlantic, and gilding the distant Islay hills. He felt, in fact, lighter, freer, with a greater flow of spirits, and, like all nature's students,—

“Not a breeze
Flies o'er the meadow, not a cloud imbibes
The setting sun's effulgence, not a strain
From all the tenants of the warbling shade
Ascends, but whence his bosom can partake
Fresh pleasures unreprieved.”—AKENSIDE.

ON THE ODOURS OF PLANTS.

By JOHN SIM, A.B.S.Ed.

The vegetable kingdom, from the earliest annals of the human race, has more or less been the subject of study and admiration.

Apart from the intrinsic value of plants as affording food, medicine, and clothing, properties and qualifications possessed by numbers, many of them are peculiarly attractive by their hand-

some forms, beautiful colours, and in numerous instances delightful perfume. It is to this latter principle of their character that we shall at present invite attention. But although some are remarkable for their aromatic odours, others are not less repulsive by their disagreeable smell; while the fragrant effluvia emanating from others court our regard, the great offensiveness of others is almost unbearable. On the other hand, a number, and I believe the greater part, of the vegetable tribes is totally devoid of any appreciable odour whatever; with these scentless plants we shall in the meantime have nothing to do. It is to those species, and those alone, whose odours produce an agreeable or offensive impression on the olfactory nerves, that the following remarks are devoted.

As far as my own experience is concerned, the odours of plants and flowers have never been employed as a means for the determination and distinction of closely allied species. Some botanists have employed one character, some another, as peculiar to this or that species; but never have I read of any appealing to the odour as a means of determination. It is however only in closely allied species that recourse to this property is really necessary.

From several years' practical experience and observation, I have satisfactorily ascertained that the odours peculiar to certain plants are permanent and unchangeable, under all ordinary circumstances of vegetable life, whether such individuals are wild or cultivated. What I mean to assert is, that the odours of plants are co-extensive with the life of the individual, and prior to maturity in some, and during the period of decay in others, is more or less powerful in different species.

The common Woodruff of our woods and plantations is nearly scentless until dried, when the odour becomes agreeable and peculiar, resembling in no small degree that of the TONKA BEAN, the fruit of the *Dipterix odorata*, a member of the *Leguminifera* and an inhabitant of the umbrageous forests of Guiana.

A very remarkable and prominent example of odoriferous plants is supplied by the genus *Melilotus*, one of the genera of this great Order. All the Melilots smell strongly in the herbarium, and this odour is very permanent. One of them, *M. cœruleus*, is employed by our Continental neighbours in the manufacture of snuff; others of this species are used for the colouring and flavouring of cheese. The powerful odour of Fenugreek is notorious.

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Everybody knows the exquisite scent of a bean-field, when in flower; and the popularity of the Sweet Pea is partially due to its smell, and partly to the beauty of its blossom.

Everybody knows the Violet by its powerful sweet smell; and it is about equally well known that the other Violets, viz. the Hairy Violet, and the Dog Violet, are quite scentless. Is not this the reason why the popular mind has applied the ungracious name of 'dog' to the scentless Violet, as the same generally unerring authority has bestowed the title of Dog Mercury on the unedible kind which grows in our woods and hedges; while the eatable sort, which grows as a weed in our gardens and fields, is dignified by the name of French Mercury?

Some botanists of considerable reputation have conjectured that the two Violets *V. odorata* and *V. hirta* form but one species. This has been shown by a Stratford correspondent of the 'Phytologist' to be a groundless conjecture. I demur to the doctrine of their specific identity, and assert that they are two species under all circumstances and conditions whatever.

I have long cultivated both plants taken from their natural location, and though grown side by side they have hitherto remained without change. The Hairy Violet has not yet selected nor borrowed the exquisite scent of her near relation, nor has the sweet-scented assumed the more elongated leaves of her less fortunate sister. They do not manifest any tendency to avail themselves of the Darwinian principle of natural selection.

It is quite marvellous that the odour of plants and flowers has never been taken advantage of as a means of determining the specific distinction of closely allied species in these days of species-splitting. I am quite at a loss to account for it. To me it appears that an odorous plant is as certainly known by its scent, either good or bad, noxious or wholesome, as a tree is by its fruit; cultivation may, and often does, produce luxuriance and monstrosity, but seems incapable of exerting any influence on the odours of plants, whether such odour be pleasant or repugnant.

Several families have the unenviable notoriety of yielding plants of fetid, poisonous odours.

The *Stapelias*, a well-known genus of South African plants, smell when in flower somewhat like excrementitious *rejectamenta*.

The Chestnut-tree, when in blossom, has the smell of the he-goat, a smell not gratifying to delicate noses.

Some of the Orchids, beautiful though they be, have smells that are absolute contrasts to ottar of roses, lavender water, etc. Some of this family, as *Conopsea*, smell very agreeably, especially in the evening. Every one is sensible of the proximity of Sweet-Briar in the evening or after a shower: the air is then capable of conveying the exquisite odours of leaves and flowers.

Chenopodium olidum has a smell which has often been compared to that of putrid fish; and our Gladwin Iris has been called the roast-beef plant, because its smell has been compared by some to that which is surely very savoury and agreeable to the hungry man. Why the same smell should be called offensive (stinking), and at the same time compared to the smell of good meat, dressed in the most natural method, is one of the inconsistencies of science.

The common Wallflower, *e.g.*, smells as sweet on the rugged and inaccessible cliffs of Kinnoul Hill, as it does when it occupies the cottager's garden or the rich man's parterre. In either condition its scent is neither increased nor modified, neither improved nor impaired. In a cultivated state, double or monstrous flowers may be produced, and a greater luxuriance of growth attained, but the odour is unchanged and unchangeable.

Some Orders of plants are characterized by their aromatic odour in an eminent degree,—the *Labiata*, or Mint family, in particular; but as no general rules appear to exist without exception, exceptions in this fragrant family also occur. The genus *Stachys* may be cited as an example, *S. sylvatica*, the flowers and foliage of which give out a heavy, sickening smell; while Balm, Mint, Thyme, Origanum, Hyssop, and Rosemary, etc., are remarkable for their agreeable perfume, whether in a dried or recent condition. On the other hand, some families are equally well characterized by their intolerable scent.

The *Scrophulariaceae*, an Order in many instances closely resembling the preceding in external appearance, but possessing very different qualities, are as remarkable for their nauseous odour and deleterious properties as the former for their innocent nature and aromatic odour. Besides, as a means of the specific determination of closely allied plants, odour may in my opinion in general be successfully and advantageously employed as an index in a great measure indicative of their proprieties, innocent or noxious, wholesome and good for food, or poisonous and productive of disease and death.

This view seems to be well supported in the *Solanaceæ*, *Umbelliferae*, and *Scrophulariaceæ*, on the one hand, and the *Labiatae* and *Rosaceæ* on the other; many individuals in the former families, distinguished by their strong repulsive odour, are poisonous in an eminent degree, *e.g.* among the Umbellifers we find *Conium maculatum* and *Ceanothe crocata*, both well-known toxicants, but happily, as far as Scotland is concerned, neither is very common; the latter plant however abounds along the Tay, below Perth. So very noxious is the effluvium emanating from this plant, that its inhalation by the author of this paper produced a severe headache, and almost prevented him from procuring and preparing a dried specimen for his herbarium. Among the Figworts are found *Scrophularia vernalis* and *S. nodosa*, the smell of neither being inviting, that of the former positively disgusting.

The Nightshade family possesses many heavy-scented plants of very poisonous qualities; *Hyoscyamus niger* and *Atropa Belladonna* may be quoted as examples, both of which are highly venefic and unfit for human food, yet valuable as medicines. We here observe the goodness and benevolence of our great Creator, who has imparted to vegetable tribes certain odorous properties agreeable or otherwise, to serve as a guide to his intelligent offspring, *Man*, by which he may be guided in his selection, according as their odours are pleasing or disagreeable to his senses.

In this case, as in all others of a general nature, exceptions will and do occur, but these exceptions are very disproportionate to the rule.

From the foregoing statements and remarks, we thus see that the good or bad odours peculiar to certain plants, furnish a pretty safe criterion by which we may be enabled to distinguish their species and determine their qualities. This principle appears to hold good throughout the entire vegetable kingdom.

In Malta, the prevalence of the *Labiatae* is remarkable; the aromatic odour arising from plants of this family on the arid and rocky knolls of that island, is peculiarly agreeable. On the contrary, the heavy, sickening odour of many plants and flowers inhabiting the jungles and ravines of the West Indies is no less singular. The reason is obvious; Malta abounds in the *Labiatae*, while St. Lucia is equally prolific in those Orders containing heavy-scented and deleterious species.

The cause of the aromatic odour in many plants can with faci-

lity be determined, in others it cannot be ascertained by the closest scrutiny. The sweet scent of the Eglantine, or Sweet Briar, evidently proceeds from the numerous minute glands with which it is invested. This may be proved by inspection with a pocket lens of even moderate power. The same holds true in the case of several others of the Rose family. Some plants contain an aromatic oil, as *Origanum*. The *Hyperica* have their leaves in most cases perforated or pitted by transparent dots, which become visible to the unassisted eye when held up against the light. *Hypericum pulchrum* in a great degree possesses a strange odour, quite different from anything with which I am acquainted. The peculiar perfume of this genus undoubtedly proceeds from the numerous punctures on the leaves, which appear to be pellucid cells containing an odoriferous, volatile essential oil. The fragrance of the *Aurantiaceæ* is evidently traceable to a similar source; indeed, the *Hypericaceæ* and *Aurantiaceæ* claim a close affinity in numerous points of structure. It is unnecessary for me further to trespass on the reader's time and patience; what I have endeavoured to unfold will, I trust, at an early period be far better treated and elucidated by others whose extensive knowledge and qualifications greatly surpass my own.

Bridge End, Perth, October, 1862.

REMARKS ON THE BOTANY OF GREAT YARMOUTH.

(From a Correspondent.)

The plants of this part of the county of Norfolk were probably better known during the latter part of the eighteenth century and the earlier portion of the nineteenth, than they are in our own days. The late Mr. Dawson Turner, of Great Yarmouth, the author of the 'Botanist's Guide,' and Mr. Wigg, both his contemporary and predecessor (?) in this field of research, also Mr. Dillwyn, of Swansea, made the botany of this district eminent.

Since that period, some changes have imperceptibly taken place; for example, the Denes have been enlarged, drainage and cultivation have introduced some new plants, while other species have disappeared. It is now nearly sixty years since the publication of the 'Botanist's Guide,' and upwards of twenty since the

last list of Yarmouth plants appeared in Paget's 'History of Yarmouth,' of which a new edition is now in the press.

The following remarks refer exclusively to a few plants which are presumed to have disappeared, or which have not been recently reported from this part of the country, and to a few which have recently been reported, but whose existence as Yarmouth plants has been questioned.

Frankenia levis, on the authority of the 'Botanist's Guide,' and on that of a Yarmouth living correspondent, grow by the river's bank, near the ferry adjoining the Nelson monument. Another correspondent wrote only a short time ago that he had collected it on the Gorleston, or Suffolk, side of the river. It has not been recently observed on either of the banks. Another correspondent informed the writer of these remarks that he saw it on the bridge which spans the river about a mile above the harbour's mouth. Any information about this plant, as a native of Norfolk or Suffolk, will be very acceptable.

The author of the articles on East Anglian Botany suspects that there has been a mistake about the appearance of *Stellaria nemorum* in the 'Phytologist' as a Yarmouth plant. That it may grow in Norfolk is not very improbable; but that it grows on Yarmouth Denes, he, the aforesaid writer, doubts, because he never saw it, but chiefly because it was unobserved and unrecorded by Mr. Wigg and Messrs. Dawson Turner and Dillwyn, and especially by the Rev. Mr. Paget. Of course, any trustworthy notice or report of the occurrence of this northern plant is most desirable, and, above all, of its having been seen near Yarmouth.

The rare *Lepidium latifolium* surely grows both in Norfolk and Suffolk, though our Yarmouth correspondent who contributed the articles on East Anglian Botany does not report it. But as this plant has disappeared in Kent, if we may trust to two recent local Floras of Faversham, it is not improbable that some of the localities given in the 'Botanist's Guide' may produce it no longer. At all events, it would be worth while to ascertain, as exactly as possible, the precise location of this species.

Enanthe peucedanifolia is a species which has been often confounded with *Æ. Lachenalii*, and the latter species may have been mistaken for the former. Both species may grow in Norfolk and in Suffolk also, but the latter is a common salt-marsh

plant, while the latter grows rather in inland localities than very near the sea.

Enanthe Lachenalii is far, very far, from being as frequent in Norfolk as it is in Kent. In the latter it contends for the mastery with Marshmallow and wild Celery. About Monkton, in Thanet, and in the ditches near Sandwich, and everywhere in Romney Marsh, these three are the common ditch-plants. They are not so common near Yarmouth.

One of the great *desiderata* among the Norfolk plants is *Senecio palustris*, once known as *Cineraria palustris*. This very scarce plant, which used to be found at or near the Bure river, which flows through Caistor marshes, also in the Waveney, near St. Olave's, etc., has not recently been reported from any part of East Anglia, nor from the Eastern Lowlands, *i. e.* the contiguous parts of Cambridge, Norfolk, Lincoln, etc.

Any information about the locality of this rare plant will be thankfully received.

Sonchus palustris, as all readers of the 'Phytologist' know, has been very recently observed in Mr. Paget's locality, viz. near Burgh Castle, and in two or three other parts of the basin of the Waveney, but on the Suffolk side. Some years ago, the present Professor of Botany in Cambridge sent a note to the 'Phytologist,' which contained the evidence of its being found at Burgh Castle, in Norfolk. This is quite as likely as its growth on the Suffolk side, and hence all the three counties of the East Anglian kingdom may still possess, or did possess till very recently, this rare species.

I will now explain, as briefly as I can, the reason why strangers are sometimes viewed with suspicion, and are occasionally warned off in not very courteous language, even when their pursuits are of the most harmless kind; and also offer certain information, help, and suggestive hints as may aid them in surmounting those hindrances and obstacles which your correspondent so pathetically describes.

That the farmers, or graziers, or land-occupiers, or land-owners should be very shy of strangers, is not a strange thing. These fenny tracts are very extensive, and are partly grazed, partly kept for hay, and partly cultivated. The broads, or large sheets of water, are either rented or occupied by those who preserve the game and fish, or who employ them as decoys for wild fowl.

Upon the whole, however, I can testify from experience that as a general rule, permission will be willingly given to real students of nature who do not simulate a love for plants while in fact they indulge a love of mischief,—for example, leave open gates, and sometimes swing on them till they break down under the weight of three, four, or half-a-dozen young men, ay, and young women too, who try the hinges of the gate, and its posts also, by moving it thus loaded as rapidly as they can drive it against the post, and so shake it to pieces.

Strangers who take the liberty of walking where there are neither roads nor paths, sometimes unconsciously do much harm, by trampling down grass about to be mown, and by letting cattle stray into shut-up pastures, by making gaps in hedges; and there are, or may be, other damages done by the young and thoughtless. But besides all this, such stragglers are not seldom guilty of aggravating their trespass by abusive language.

The following notification is hereby given to all botanists, and to all who are engaged in the pursuit of natural science; ichthyologists and ornithologists, or, in the common vernacular, poachers, are the sole exceptions. If any genuine lover of nature has a wish to visit the Fens of Norfolk during the season next ensuing, he should intimate his intentions to the humble individual who undersigns this article.

He has the pleasure of informing all such intending visitors that an application has been made to some of the owners and occupiers of the most extensive portions of the Fens; and also that the latter will give free access, and afford all needful information. He is not at liberty to publish the names of these generous favourers of science. All naturalists will in future meet with civility and attention, and will no more, as your correspondent was, be intimidated by threats of fine or imprisonment.

It is not, however, to be assumed that these graziers, farmers, reed-cutters, fish and game preservers, give a free passport to every one who has a sturdy pair of legs under him, or who is even provided with a vasculum slung over his shoulders or in his pocket, or is provided with an insect-net like a game-bag. Those who go without an introduction are likely to be requested to retrace their steps, or to be handed over to the care of one of the guardians of the lives and properties of her Majesty's lieges.

The under-writer will not only ensure civil treatment for such

visitors as go into these parts with the above-mentioned honest intentions, but he will give them the necessary information about reaching the most productive parts of these Fens, and the routes and other locomotive appliances which may be most convenient, and the names and addresses of the persons to whom they will have to apply.

I fully agree with your correspondent that Norwich is the best and the most central locality in the county. Beccles, in Suffolk, will be another good centre for the collector. From both of these places he will find a great variety of localities, rich in novelties and easily accessible.

I am, etc.,

ALIQUIS.

45, Frith Street, Soho Square, London.

Note.—In justice to our Yarmouth correspondent who supplied the articles on East Anglian Botany, it should be stated that he has no real doubt about *Lepidium latifolium* being a native of all the three East Anglian counties, Essex, Suffolk, and Norfolk; nor that anybody could mistake or confound the two species, *L. latifolium* and *L. ruderale*. But after all, the very best botanist might by inadvertence write the one when he meant to write the other.

The other two doubtful species, viz. *Frankenia laevis* and *Stellaria nemorum*, are not so easily disentangled from the confusion in which our excellent correspondents have involved them.

Frankenia laevis was not to be found easily or plentifully about Yarmouth at the period of the publication of Paget's Flora, say twenty years ago; or if it had, it would have been recorded in that work as still to be found there.

In the 'Phytologist,' vol. vi. p. 227, this species is stated to be "abundant in salt-marshes on Breydon Water, near Yarmouth, and all over the marshes at Caistor." This is a flat contradiction to what our correspondent saw in July, 1862, and we must leave the matter to be settled between those two learned pundits. The one says that the plant is ABUNDANT on the shores of Breydon, and all over Caistor marshes; the latter asserts that it is so far from being abundant that it is not there at all; not a trace of it was to be detected on either of the assigned localities. Salt-marshes are not the usual localities of this plant, which rather prefers the sand or sandy shingle, or overhanging banks close by the sea.

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Next, *Stellaria nemorum* was never recorded as a Norfolk plant prior to 1861, when it was entered on the authority of our most estimable Aldeby correspondent. That this latter-named plant does not grow in the many places above mentioned, our Yarmouth correspondent will not aver, for he has never been there to look for it. But an inveterate sceptic would surmise that probably *Cerastium aquaticum* was mistaken for it. This plant is not so unlikely to be confounded with its rarer and more northern cousin as the two *Lepidiums*.

The Editor does not, and ought not to doubt the fidelity and accuracy of either of his Norfolk correspondents; for if he did, all confidence in testimony would be shaken; but he cannot refrain from stating that his other correspondent botanized about the North Battery on Yarmouth Denes, and saw all the plants with which *Stellaria nemorum* is said to be associated, without seeing the plant in question.

Our correspondent's assertion that he intended only to enter in his list the rarer plants of the seashores and salt-marshes, must be somewhat modified when it is considered that he enters *Galium verum* and *Sium angustifolium*, plants which are quite as common, or commoner in most localities, than are the two species *Lepidium ruderales* and *Glaux maritima*.

ROMAN OATS ON ENGLISH FARMS.

By JAMES BINKS.

In a field on a farm occupied by Mr. Binks, at Pepper Moor, near Alnwick, some ancient encampments long existed which tradition ascribed to the Romans. The lapse of time, and the spirit of agricultural improvement, gradually obliterated almost every trace of them; and about a year ago, the last of the whins, which time out of mind had covered the ground where the Roman legionaries had trodden, were cut down, and the land ploughed and sown with barley. When the barley was ready for the sickle, Mr. Binks was astonished to observe several heads of strange-looking oats amongst it. Some of them were unusually tall and strong, with long branching stemlets, whilst others had globular heads, resembling the head of the onion. Mr. Binks collected no less than seventy-five varieties never seen in the district before.

He has sown the seed, and intends to exhibit a collection of them at the next show of the Alnwick Horticultural Society. The place, as it has been conjectured, has been a cavalry camp, and the oats, which were perhaps ripened under other skies, after lying covered with the *débris* of the camps for probably fifteen hundred years, will again shoot into cereal beauty, and may add one or more permanent varieties to the stock of the English farmer.

Mr. Binks has kindly furnished additional particulars in a letter, a portion of which is subjoined. If the varieties, or indeed any one of the varieties of the oats now growing under the superintendence of Mr. Binks, differ from the varieties in cultivation in Great Britain, it will be strong presumptive evidence, and evidence of a most important character, in support of the opinion of those who assert that the seeds of the cultivated cereals retain their vitality for very long periods, when the seeds are placed in conditions favourable to their preservation. Whether the encampment was formed during the Roman occupation of the country or not, is for antiquarians to determine. If the camp was formed during the period of any of the invading inroads which have taken place in England—Roman, Scandinavian, or Saxon,—the fact may be established that, since the period the camp was occupied, the grains of the oat buried in the soil have retained their vitality unimpaired. It is well known that the seed of the wild oat retains its germinating powers for centuries, but there is no instance of the seeds of the cultivated varieties of the oat germinating after a few years.

It is worthy of notice that Mr. Binks can speak to the state of the camp ground for the very long period of sixty-three years; and he writes that it has been covered with whins during that period.

“*Pepper Moor, May 5, 1861.*”

“Sir,—The land the oats grew upon is an ancient encampment, enclosed with a mound. The space sown with barley was two acres. I have been on the farm sixty-three years, and I never saw anything on the land but whins. The oats were never sown by me. There were many sorts in the field which neither myself nor any who inspected them ever saw the like of before.

“It is not in my power to send you any samples at this time. as both my friends and myself were anxious to preserve every

oat. I have sown them in a small garden, where I hope to be able to preserve them. I have sown seventy-five varieties. I don't say there is that number of distinct kinds; but often last winter, when examined by eminent farmers, they scarcely could compare two ears together, however much alike, but there was always found some slight difference. There are many sorts in the collection as fine grain as I ever saw, and some were very prolific. I counted one ear for curiosity, and the yield was 161 corns.

"I have sown every kind by itself. They are at this time looking very healthy, although the weather is very cold and frosty. I have been solicited to exhibit samples at the Horticultural Show at Alnwick, which takes place in September. I am, etc.,

"JAMES BINKS."

COLEWORTS, FROM TURNER'S 'HERBALL.'

"There are yit ii kyndes of wyld cole, whereof I fynd no mention in any wryter. The one is a wonderful great cole; and hath leues thrise as thike as euer I saw any other cole have; it hath whyte floures, and round berryes, like yuy (Ivy), where in the sede is conteyned. This herbe groweth at douer, harde by the see syd. The other kynde of wyld cole groweth euer by water sydes with a leafe indentyd, as rokket is; in taste, smelle, fashione of floure, and sede, lyke unto the gardyne cole. Of these I name in latyne brassicam dobricam, in Englyshe dover cole: because I found it fyrst besyde dover. The second kynde I cal brassicam fluviatilem; and in english 'water kole,' because it groweth euer by water sides."

NOTES OF A BOTANICAL TOUR IN BANFFSHIRE.

(Continued from p. 475.)

Refreshed with our repast, we looked more cheerfully at the portion of our journey that yet lay before us. About half was yet to be done. Rain was now at times pouring down in torrents. Still on we toiled, and by-and-by reached hard ground—the granite. Had the afternoon been fair, we might have crossed Ben-na-Bynach, but as the hills were covered with mist, we had to take the route round the base. We spoke little: the

rain had dulled our spirits somewhat. Mile after mile was left behind. The ground was granite, covered with a thin sprinkling of heather, mixed chiefly with Reindeer Moss, and variegated by the Club Mosses (Tods' Tails). The one most common in these parts is one very rare in England—*Lycopodium Selago*. This species grows also on the Knock and on Belrinnes. The other species are *L. clavatum*, *L. alpinum*, and *L. selaginoides*, the smallest of them, and found growing from the sea-level to the tops of the hills. We also met with a few Fir-trees about three feet high. They were struggling for life. The soil was barren; the climate was uncongenial; everything was against them. Yet they were struggling bravely against every disadvantage. They were poor stunted, twisted things—miserable pigmies when compared to their more fortunate brothers, that rise up in their dark-green symmetry and splendour. Yet there was a beauty in them,—the beauty of fighting against adversity, and prevailing. There is an indescribable feeling when we look on beauty in the human form that has been nursed in all the refinements of high-bred life. There is a music in such beauty, and every one who has a heart at all feels that music, and delights in it, and is refined and cheered by it. But there is also a music, grand and terrible, in the beauty of that man who has gone down to the pit of hard toil for an honest living, or of adversity, or of sorrow, and come out, his frame bent and his face seamed. It is the music of the storm, and one feels the strength rush to the arm, and the heart beats faster, and life looks bright.

By-and-by the river Avon was gained, and we toiled along its banks through broken peat-bogs—the most fatiguing part of our journey. At last the loch, with Cairngorm on one hand, Ben-Main on the other, and Ben-Macdhui in front, burst upon us. It was a wild and wondrous sight. Evening was gathering fast; heavy clouds were rolling along the hills, and the sky was one mass of black. Heaven and earth seemed to meet. The streams were tumbling in white foam over the precipices, as if they were poured out of the hands of the storm-spirit. The loch lay calm below, fringed with yellowish-red sand, in some parts of a light blue, in the shallow parts of dark blue, almost black in the deeper parts. All was dark except the foaming torrents and the patches of snow on the hillsides. The wind was howling at times down the gullies, at other times there was not a breath;

the rain was falling heavily. Every sound was dead at times but the rush of the waters. It was like the noise of the sea in a storm—deep calling unto deep. At last the “Shelter Stone” was reached, and we laid ourselves to rest on a scanty bed of heather, and were soon asleep. Morning dawned gloomily, and having resolved to return to Tomintoul at once, we breakfasted, and then fell to and burned our bed. We had qualms of conscience in doing so, because other travellers might arrive in a storm, and then they would have no bed at all. But adversity often makes us selfish. We returned by the Cairngorm side of the loch, and this is the side the traveller should take for reaching the “Shelter Stone” with most ease when he comes from Tomintoul. The morning was calm, the hills were cleared of mist, the sky was covered with clouds. The streams from the hills were smaller than when we reached the loch the night before. Still they were pouring down through the masses of broken stones, their waters clear as crystal and cold as ice. Not a sound was to be heard but the noise of many years, hastening back to their parent sea. The hills stood calm in their mighty grandeur, here flushed with a bloom of heather, there throwing up their bare ribs, crusted over with Lichens (for nature here, as elsewhere, “abhors a vacuum”), there broken into splinters, and the masses heaped together in every variety of form,—

“Craggs, knolls, and mounds, confusedly hurled,
The fragments of an earlier world.”

Such a lonely scene calmed and cheered the heart.

Our route lay over a ridge of the Cairngorm range, and in passing along we noticed among the plants formerly spoken of, a beautiful little Willow, *Salix herbacea*. It grows only on the hills, and at considerable elevations. Among the Ferns we observed *Lastrea Oreopteris* (Mountain Shield-fern). On the higher ground *Carex rigida* makes its appearance, as also *Luzula spicata* (Spiked Hairy Rush), a genus of plants resembling the Grasses. Several other species grow in the county,—*L. sylvatica*, *L. campestris*, and *L. pilosa*. The generic name *Luzula* is derived from the Italian word *lucciola*, a glowworm, from *luccho*, to shine, and this idea has its origin in the following way. The leaves are fringed with long hairs, and these, when carrying a globule of dew each on its tip, glittering in the sun, suggested the name of ‘glowworm plant’ to the poetic Italian.

Having reached the top of the ridge, we took our bearings, and made for the top of Ben-na-Bynach. This mountain is composed of red granite, and reaches the height of 3530 feet above the sea-level. A small stream flows between it and the Cairngorm range, over a kind of clay-slate rock. On its banks grow *Gnaphalium supinum* (Dwarf Cudweed) and *Polypodium Phegopteris*, the latter in small quantity. The top was soon reached, and there were found two plants not met with before—*Silene acaulis* and *Azalea procumbens*. *S. acaulis* belongs to the Chickweed family. It has little or no stem, and hence its specific name. The flower is purple or white, upon solitary stalks. Another species grows by the seaside. *S. maritima* (Sea Campion), a large plant with white flowers, very unlike its brother of the mountain. *Azalea* is of the Heath family, remarkable for the beauty of their flowers. Some of them have poisonous and narcotic qualities. Though the genus *Azalea* is numerous in all parts of the world, in Britain there is but this species. The Rhododendrons are merged in this family.

From Ben-na-Bynach we looked down on the whole length of our journey, over one wide waste of greyish Heath. It was a lonely scene. In the distance we saw our bothie, and we made for it, and again acted landlord for ourselves. As evening came down, we reached Tomintoul, and Miss Smith did everything to make us comfortable. Our drenching was soon forgotten. Next day (Thursday), it rained incessantly, and our journey had to be broken off. Yet, before starting for Dufftown in the afternoon, we made an inroad into Craighalkie, a place described to us by a man travelling on the road as "containin' a' kin's o' flowers that grows o' the face o' the earth." Within the space of half an hour, we had collected *Gymnadenia conopsea*, *Epipactis latifolia* (very rare), *Listera ovata*, *Primula veris*, *Pimpinella Saxifraga*, *Saxifraga aizoides*, *Sanicula europæa*, *Vicia sylvatica*, *Origanum vulgare* (Marjoram), *Calamintha Clinopodium* (wild Basil); and of Grasses, *Melica nutans*; and of Ferns, *Asplenium Ruta-muraria* (Wall-rue). We now started for Dufftown. It did not cease raining till we reached our destination. Next morning (Friday), we took train for Banff, which we reached in the forenoon. We were unfortunate in the weather, but we made the best of it, and the readers of the Journal have now the fruits.

Reviews.

Un Coup d'Œil sur la Florule des Environs de Han-sur-Lesse.

Par FRANÇOIS CRÉPIN, Membre de la Société Royale de Botanique de Belgique.

This district of the kingdom of Belgium, in the neighbourhood of Rochefort, has been accurately investigated by M. Crépin, whose botanical labours have already enriched the literature of his native land, and also considerably increased our acquaintance with Belgian plants.

The small *brochure* of which the title is given as a heading to this article, contains only a couple of sheets of octavo, thirty-two pages, and yet it tells us succinctly what are the topographical, geological, and botanical characteristics of this not extensive tract. The surface, as in most calcareous countries, is very uneven, having many scars or rocks elevated above the soil, from two hundred to three hundred feet. The highest altitude may be about eight hundred feet above the level of the Meuse.

"About the end of March, or at the beginning of April," our author writes, "the hills and sunny banks are yellow or blue with the thousands of spikes of *Carex humilis* and *C. montana*, and of *Sesleria cærulea*, species which constitute the turf; and this is mixed here and there with the pretty cups of *Anemone Pulsatilla*, soon replaced by the long feathery processes of their fruit. At the same period appear *Thlaspi montanum*, with masses or patches of flowerets which emulate the whiteness of April snows. By degrees the little coronals of *Hippocrepis comosa* appear, like golden chaplets fitted for the tiny heads of some of Queen Mab's handsome retinue. *Fragaria collina*, which produces delicious fruit, the grand *Geranium sanguineum*, *Veronica prostrata*, *Globularia vulgaris*, and *Cerastium brachypetalum*, help to beautify the scene."

About the end of May, and in the first half of June, M. Crépin continues, the flora is diversified with *Polygala comosa*, a species very distinct from *P. vulgaris*, also with *Brunella* (*Prunella*) *alba*, quite as remote from *B. vulgaris*; here is also *Lactuca perennis*, *Phalangium Liliago*, *Polygonatum vulgare*, *Melica nutans*, and *Rosa pimpinellifolia*, the smallest and the most elegant of our Roses.

From the 15th to the 30th of June, the vegetable carpet is still

further enriched by the following Orchids, viz. *O. muscifera*, *O. apifera*, and *O. arachnites*, and the rare *O. Simia*; *Rosa coronata*, *R. sepium*, *Trifolium montanum*, *Verbascum Lychnitis*, *Campanula glomerata*, *C. persicæfolia*, *Stachys recta*, *Allium sphærocephalum*, the very rare *Avena tenuis*, the humble *Festuca rigida*, and *Botrychium Lunaria*.

In the beginning of July the spring flowers are replaced by those of summer, a rather meagre collection on these open plains and slopes, now scorched by the solar heat. The most remarkable species are *Hypericum montanum*, *Althæa hirsuta*, *Bupleurum falcatum*, *Libanotis montana*, *Gentiana cruciata*, *Digitalis lutea*, *Serratula tinctoria*, *Podospermum laciniatum*, *Melica ciliata*.

In the month of September the only fresh accession to the scanty flora is a profusion of *Linosyris vulgaris* and *Gentiana germanica* (*G. Amarella*?).

The flora of the rocks and rocky *débris* is, in addition to several of the above-mentioned species, *Thlaspi erraticum*, *Arabis brassicæformis*, *Cardamine impatiens*, *Turritis glabra*, *Alyssum calycinum*, *Cotoneaster vulgaris*, *Veronica prostrata*, *Stachys alpina* and *S. recta*, *Hieracium fagicolum*, *Rumex scutatus*, *Daphne Mezereum*, *Polypodium calcareum*, *P. Dryopteris*, etc.

The following grow in groves and thickets, in addition to several of the before-said, viz. *Geranium lucidum*, *Malus acerba* (Crab), *Sorbus Torminalis*, *S. Aria*, *Sambucus racemosa*, *Dipsacus pilosus*, *Cirsium lanceolatum* var. *nemorale*, *Lappa pubens*, *Ornithogalum sulphureum*, *Loroglossum hircinum*, *Orchis fusca*, *O. Simia*, *Cephalanthera ensifolia*, *Carex polyrrhiza*, etc.

The following plants are most common in the woods, viz. *Anemone ranunculoides*, *Aconitum Lycoctonum*, *Actæa spicata*, *Stellaria nemorum*, *Impatiens Noli-me-tangere*, *Acer platanoides*, *Monotropa Hyopithys*, *Corydalis solida*, *Dentaria bulbifera*, *Ribes rubrum*, *Chrysosplenium alternifolium*, *Pulmonaria tuberosa*, *Atropa Belladonna*, *Lathræa Squamaria*, and many other species already noted under the preceding divisions.

The meadow plants are *Polygala comosa*, *Polygonum Bistorta*, *Gagea lutea*, *Trifolium ochroleucum*, *Fragaria collina*, *Scorzonera humilis*, *Orchis coriophora*, *O. ustulata*, *Gymnadenia viridis*, *Carex tomentosa*, *C. hornschruchiana*, *Eleocharis uniglumis*, *Crepis paludosa*, *Epipactis palustris*, *Poa serotina*, etc.

The rarer agrarial species are *Myosurus minimus*, *Fumaria Vaillantii*, *Gagea arvensis*, *Adonis æstivalis*, *Gypsophila muralis*, *Spergularia segetalis*, *Papaver Lecoqii*, *Erysimum orientale*, *Camelina sylvestris*, *Lathyrus tuberosus*, *L. hirsutus*, *L. Nissolia*, *L. Aphaca*, *Lythrum hyssopifolium*, *Bupleurum rotundifolium*, *Carum Bulbocastanum*, *Orlaya grandiflora*, *Turgenia latifolia*, *Centunculus minimus*, *Orobanche Picridis*, *Stachys annua*, *Linaria arvensis*, *Filago neglecta*, *Barkhausia taraxacifolia*, *Euphorbia platyphylla*, *Polycnemum arvense*, *Ornithogalum umbellatum*, *Bromus arduennensis*.

The following grow in rivers or ponds, or near water, or in inundated places, *Limosella aquatica*, *Scrophularia Ehrharti*, *Mentha rubra*, *Salix seringiana*, *S. rubra*, *Triglochin palustre*, *Cyperus fuscus*, *Leersia oryzoides*, *Ranunculus trichophyllus*, *R. fluitans*, *Myriophyllum alterniflorum*, and others already mentioned.

Upwards of thirty of the plants in this little tract are quite foreign to the flora of Britain, and about as many of them are either very rare plants on this side of the German Sea, or they are suspected aliens or certainly introduced species. The following list will show both the plants that are absent here and those common to both countries. *Note*.—The former are in italics, the latter in the common character.

<i>Gypsophila muralis</i> .	<i>Gentiana germanica</i> .	<i>Ulmus effusa</i> .
<i>Spergularia segetalis</i> .	<i>Pulmonaria tuberosa</i> .	<i>Salix seringiana</i> .
<i>Malva Alcea</i> .	<i>Verbascum thapsiforme</i> .	<i>Ornithogalum sulphureum</i> .
<i>Polygala comosa</i> .	<i>Veronica prostrata</i> .	<i>Loroglossum hircinum</i> .
<i>Papaver Lecoqii</i> .	<i>Linaria arvensis</i> .	<i>Orchis Simia</i> .
<i>Arabis brassicæformis</i> .	<i>Scrophularia Ehrharti</i> .	<i>Orchis incarnata</i> .
<i>Camelina sylvestris</i> .	<i>Orobanche Picridis</i> .	<i>Orchis coriophora</i> .
<i>Thlaspi erraticum</i> .	<i>Stachys alpina</i> .	<i>Cephalanthera pallens</i> .
<i>Thlaspi neglectum</i> .	<i>Stachys annua</i> .	<i>Epipactis atrorubens</i> .
<i>Trifolium montanum</i> .	<i>Stachys recta</i> .	<i>Epipactis palustris</i> .
<i>Trifolium ochroleucum</i> .	<i>Stachys ambigua</i> .	<i>Carex polyrrhiza</i> .
<i>Lathyrus hirsutus</i> .	<i>Sambucus racemosa</i> .	<i>Carex hornschurchiana</i> .
<i>Fragaria elatior</i> .	<i>Galium sylvaticum</i> .	<i>Eleocharis uniglumis</i> .
<i>Rosa coronata</i> .	<i>Cirsium oleraceum</i> .	<i>Scirpus compressus</i> .
<i>Rosa sepium</i> .	<i>Cirsium lanceolatum</i> .	<i>Avena tenuis</i> .
<i>Circeæ intermedia</i> .	<i>Lappa pubens</i> .	<i>Melica ciliata</i> .
<i>Bupleurum falcatum</i> .	<i>Filago neglecta</i> .	<i>Festuca rigida</i> .
<i>Carum Bulbocastanum</i> .	<i>Linosyris vulgaris</i> .	<i>Poa serotina</i> .
<i>Turgenia latifolia</i> .	<i>Scorzonera humilis</i> .	<i>Bromus arduennensis</i> .
<i>Centunculus minimus</i> .	<i>Hieracium fagicolum</i> .	<i>Anemone ranunculoides</i> .
<i>Gentiana cruciata</i> .	<i>Polycnemum arvense</i> .	<i>Actæa spicata</i> .

This FLORULA of Han is a very agreeable addition to our

botanical literature, and the Belgian botanists may well be congratulated on their possession and appreciation of its excellent author.

The British authors on local botany might imitate the example of their Continental *confrère*, and classify their phytogeographical monographs, as M. Crépin has divided his *Florula*, into spring, summer, and autumnal plants,—species that inhabit the pastures, the woods, the rocks, the marshes, and rivers.

Petites Annotations à la Flore de la Belgique. Par FRANÇOIS CRÉPIN. Premier Fragment.

The following three species, new to the Belgian flora, are described and localized in a half-sheet, issued last year, 1862, viz. *Polygala calcarea*, F. Schultz; Gren. and Godr. Fl. Fr. i. 196, Coss. and Germ. Atlas, t. vii. f. 4-6.

This species, our author observes, page 2, is distinguished from *P. vulgaris*, though many authors unite them, possibly without cause, by the following characteristic marks:—1st, by the lower leaves being arranged in rosettes, and in being longer than the upper leaves; 2nd, by the nervation of the wings (calyx); 3rd, by the elongated lateral lobes of the aril. A comparison of the species or form which grows on our chalk-downs, with that of our moist meadows and pastures, is the surest means of settling this question. The characters given by M. Crépin, though not all very obvious, yet if constant will be sufficient to separate the two forms or species. This is a more satisfactory way of proceeding than a comparison of the descriptions with each other, or even of the examples with the descriptions.

On page 3 there is a long note or observation on the three kindred species or forms of *Veronica agrestis*, *V. polita*, and *V. opaca*. The latter has not hitherto been observed in England. M. Crépin believes that they present characters which will keep them distinct. This discriminative observer lays stress for distinguishing the last-mentioned species, on the equal dimensions, both in length and breadth, of the leaves, also on the elliptical sepals not overlapping at the base; on the insertion of the stamens, on the depth and width of the notch in the ovary, the length of the style, etc. A careful examination of numerous

specimens may be rewarded by the discovery of *V. Apaca* in England.

Scirpus carinatus, Sm., is another recent discovery made by our author. From his remarks on this species, compared with the kindred forms of *S. lacustris*, and *S. glaucus*, or *S. Rothii*, he does not appear to be very sanguine about the distinctness of these species.

Spartina stricta is another new discovery in Belgium; also *Polystichum cristatum*, Roth, and *Lycopodium Chamæcyparissias*. Botanists are requested to overhaul their stores of *L. complanatum*. It is worth while to look at our hoards of *L. alpinum*, and try to discover among them *L. Chamæcyparissias*, and *L. complanatum*, and *L. alpinum*,—or more than two single gentlemen rolled into one, as the comedian told us in our juvenile days.

Elodea canadensis (*Anacharis*, Bab.). M. Crépin has very obligingly sent us the result of a careful study of the above recent introduction into (we should not write British, but) European waters. From this succinct memoir, our author tells us that it was seen for the first time in Europe by John New, (any relation of our excellent correspondent, Wm. New, curator of the botanical establishment of Bangalore?) in a piece of water at Warrington, Ireland. Possibly some of our readers, whose geography is more extensive and of a more recent date than ours, will tell us where this place is.

British botanists know that it was discovered in the Grand Junction Canal by a fair botanist, and subsequently, by the late Dr. Johnston, in a pond at Dunse Castle, Berwickshire, at a considerable elevation, whence it descended the White Adder, which it filled; and it now threatens to fill the Tweed.

M. Crépin does not state when he first observed this pest in Belgium, but merely informs us that it was detected by one of the gardeners in the Botanic Gardens of Brussels, in 1860. In Utrecht, Holland, it was seen in 1861.

The means of its introduction into Belgium are as mysterious as those whereby it was conveyed to Scotland, and established in the lakes on the spurs of the Cheviots, near Dunse.

Our author intimates that its dispersion has been promoted (*facilité*) by the floating wood. It might have reached the Tweed from the Cheviots on chips or bits of trees, but it could

not have crossed the Atlantic and scaled and descended the Scottish mountains on such craft, if its original home be the Canadas. It could not have reached the ponds of Clapham and Wandsworth on the wooden floats, for there are none, nor any water to float them. Have any geographical botanists investigated the question of its nativity? Has it a home, or is it like the wise philosopher described by Horace, who, when overtaken by the storm, entered wherever he could find an open door, "*ubi tempestas rapit deferor hospes*." Where was it first seen?—in Ireland, or Scotland, or Canada? Who can tell whether it be a subject of the ancient Scandinavian floral kingdom, or whether it existed in the glacial period? Is it a new species,—one of Dr. Darwin's *protégés*? We can answer for its ability to keep its own in the great struggle for existence. It is not very particular about its quarters. Its property is to exterminate every competitor in the life-battle; not to select any of the good qualities to be found in any of its contemporaries, but to kill them all outright.

M. Crépin's paper professes to be a *rédaction* or adaptation of Mr. Professor Babington's description of this troublesome visitant, a paper which was published in *Annals and Mag. of Nat. Hist.*, 1858, p. 81, and *Ann. Sc. Nat.*, 1849, t. 11, p. 66; and of Dr. Caspary's article "Die Hydrilleen," in '*Jahrbücher für Wissenschaftliche Botanik*,' 1858, pp. 378, 513; *Ann. Sc. Nat.*, 1858, t. ix. p. 323, etc.

Our author's paper may be considered as a more detailed account, or as an amended description of this curious and strange plant.

M. Crépin observes, page 9, that Professor Babington and Mr. Salter (*qu.* the late Dr. Bell Salter?) failed to describe the fourth leaf, in the axil out of which the flower is developed, and also states that Dr. Caspary omits it. "In all the works which I have seen," writes M. Crépin, "the prefoliation and the prefloration (the state of the leaf and flower-buds) are not mentioned. The lower leaf of every verticil (whorl) slightly overlaps the borders of its right and left associates; the latter in its turn slightly overlaps the right hand-one. The third leaf (the whorl rarely consists of more than three leaves) has both its borders slightly overlapped. The flower-bud is, according to this minute observer and scrupulous describer, also imbricated; or the segments of the perianth overlap each other, as above related?"

Practical Hints on the Culture and Management of Rock Plants.

By JAMES LOTHIAN, of Campbeltown, Argyleshire.

This pretty little volume, as our obliging correspondent informs us by private letter, was printed or published by W. H. Lizars, Edinburgh, some years ago. As the author has kindly presented it to the editor of the 'Phytologist,' the latter believes that it will be acceptable to many readers who admire rock plants, but who may neither know what plants to select for a rockery nor how to treat them.

This manual, by a practical cultivator and botanist, will give them all necessary instruction on both these points. In a sensible brief introduction, Mr. Lothian truly observes, that "a taste for flowers universally prevails among the poor as well as the rich, from the highest peer in the land down to the humble cottager, who possesses a small patch of ground around his dwelling.

"The alpine or rock-garden should consist of a rockery, a pond, or piece of water of any size, and at one end a small artificial bog, for plants requiring this mode of treatment.

"It is necessary," the author continues, "to divide the subject into two parts: 1st, situation and formation of the rockery, pond, and bog, general arrangement of the plants on the same, etc.; 2ndly, culture and general management of the collection, etc."

After discussing these points, there follow directions for the formation of the rockery, the pond, the paths, the figure, dimensions, situation, etc., subsequently the materials most suitable for the different parts, and for the various kinds of plants which are to be cultivated, either among the stones, or in the pond, or along the margins of the walk, in the bog adjoining, etc.

For information on these separate heads, the reader of this notice is referred to the work itself, which, although now out of print, probably a second edition may be ready ere this announcement appear before our readers.

This part of the book is illustrated by four very pretty cuts, showing the shapes, dispositions, etc., of the several constituents of a rockery.

Those who are interested in the collection, preservation, and enjoyment of a collection of alpine plants, may consult this as a safe and practical guide.

This treatment of alpinism is twofold:—

1st. The management of the hardier sorts in winter, spring, summer, and autumn. The hardier kinds are Pinks, Saxifrages, and other succulent or half-succulent species, *Azaleas*, *Andromedas*, and others which need not be mentioned here as there is a list of them in Mr. Lothian's treatise.

2nd. On the treatment of the tenderer and rarer kinds of alpiners.

In an appendix the author has entered a list of plants suitable for the rockery, pond, etc. This list amounts to upwards of a thousand, and it might easily be enlarged. It will be easy for the amateur to make a selection from the Nurseries, where such plants are kept for sale. The neatest, the loveliest, and the best adapted for this purpose will be found among the Primrose family, the *Crucifers*, *Campanulas*, *Leguminifers* (*Astragalus*, etc.); the Crowfoot tribe (*Anemones*, *Ranunculuses*, etc.); Thrift, *Gen-tianas*, *Pulmonarias*, and other genera and species of the Order *Asperifolia*; Pinks, *Silenes*, and other members of *Dianthaceæ*; several *Veronicas*, and a few composite plants, *Orchids*, etc. The *Pinguiculas*, and some exotic species of *Pedicularis* are very suitable as bog plants, and to these many Ferns may be added.

The American shrubs, affording both shelter and shade as well as ornament, are indispensable in any extensive or permanent collection of this nature.

It should not be forgotten, that besides the diagrams or cuts for illustration of the rockery, pond, etc., there are handsome coloured drawings of *Azalea procumbens*, *Dryas octopetala*, *Menziesia*, *Andromeda*, *Asplenium*, *Woodsia*, etc.

A Catalogue of Stove, Greenhouse, and Hardy Exotic and British Ferns. By A. STANSFIELD and SONS, Vale Nurseries, Todmorton.

The varieties of British Ferns are daily (it may be said) increasing; for example, the new Ferns, or rather the new and old varieties of *Asplenium* *Adiantum-nigrum*, are now six; those of *A. marinum* just as many.

The varieties of *Athyrium Filix-fœmina* are as numerous as they are strikingly beautiful. The more recent productions are *Fieldiæ*, one of the most valuable of the recent additions to this

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tribe. Of this there is a subvariety, named Pritchard's form, "one of extreme elegance and beauty." "*Athyrium Filix-fœmina grandiceps*, a recently-discovered variety, throws into the shade all the other crested and corymbose forms of the Lady-fern, beautiful as many of them are. Its habit is very dwarf; the terminal tufts or crests of the fronds are very dense, and are frequently several inches in breadth at their rounded tops."

The varieties of *Blechnum Spicant* are now forty-four; and if their prices, as estimated by Messrs. Stansfield,—good judges certainly,—be any proof of their value, they are very scarce, as well as beautiful. Their prices range from 10s. 6d. to 2s. 6d., and the average is from 5s. to 7s. 6d.

Lastrea Filix-mas has now a progeny of more than fifty children, some of them (many of them?) distinguished for their beauty and rarity. But of all the British Ferns, *Scolopendrium vulgare* still sustains its pre-eminence in being the most prolific. Its varieties are now upwards of fourscore.

The hardy exotic and British Ferns named and priced in this list are above eight hundred. This is probably the largest collection in the kingdom.

BOTANICAL NOTES, NOTICES, AND QUERIES.

ANSWERS TO CORRESPONDENTS, NOTES, QUERIES, ETC.

EARLINESS OF THE SEASON.—For some years, our daily and weekly organs of intelligence have supplied their readers with proofs of the extraordinary mildness of the months of the waning year, viz. October, November, and December. Our correspondents have supplied us with several statements about the earliness of the present season, 1863.

Our Warrington correspondent, in a letter dated the 18th February, gives the following information:—"In addition to such plants as Gorse, Daisy, Chickweed, Shepherd's Purse, and other species which are always in flower when the weather is mild, we had in January, *Lychnis diurna*, and in February, *Anthriscus sylvestris*, *Chrysosplenium oppositifolium*, *Mercurialis perennis* in bloom, while the hedges are already getting their verdant vernal livery. Let us hope that this precocity may not be productive of subsequent premature decline."

A few days later, the same kind correspondent sent another longer list, as follows:—"In addition to our early-flowering plants already sent, I may mention as now in flower, *Potentilla Fragariastrum*, *Stellaria media* in fruit, *Senecio vulgaris*, *Eriophorum vaginatum*, *Primula vulgaris*, and *Galanthus nivalis*, in a dingle near the ruins of Rock Savage Castle, Cheshire. Did I mention *Lamium purpureum* as growing under the walls of

the above ruins? This was a week ago, and some of the corollas had fallen. As I have just returned from the Moss, I enclose a bit of *Andromeda polifolia*, to show you its state. *Ranunculus Ficaria* is also in flower."

Our Preston correspondent wrote the following on the 21st February:—"As a proof of the earliness of the season here, I enclose two specimens of *Gagea lutea*, gathered by myself, in our only Preston habitat (this afternoon, Feb. 21st). I have observed the plant for eight seasons in succession in the habitat referred to, and it is earlier in blossoming this year, by at least a month, than I have ever yet known it. I have observed the common Primrose in blossom for several weeks, and a fortnight ago I observed the Snowdrop, apparently wild, in great abundance and in full blossom, in a wood about four miles from Preston. To-day I have gathered, for the first time this year, *Ranunculus Ficaria*."

About London the Mezereon has been in blossom for at least a week (Feb. 28th), the *Pyrus japonica* for probably as long, and the tips of the buds of the Almond-tree are assuming their pink colour.

Mr. Britten has very kindly sent a communication about the locality of *Anemone apennina*. Would he be so good, either in person or with the help of his Wimbledon friends, as to give us a guide to its locale in Wimbledon Woods?

A good and accessible station for *Anemone ranunculoides* is wanted.

To the author of the "Letters from Argyleshire," our most grateful thanks are due, and are hereby tendered. It is hoped that the printer will find room for some more of his communications in our next month's issue.

Our obliging correspondent at Campbeltown, Argyleshire, has sent a newspaper, the 'Argyleshire Herald,' in which the locality of a rare Fern is announced, viz. *Asplenium Ruta-maria*, growing at Kildalloig, in that district (*Kintyre*). Will Mr. L. be so kind as to tell us on what medium this rare Fern grows,—on a wall, roof, or on a rock? We should be obliged to him for any information about the localities of the much rarer *Adiantum Capillus-Veneris*, the true Maiden-hair Fern, on the western coasts of Scotland.

Our estimable correspondent who lives at Rouen has sent us seed of a *Verbascum*, which, with the foliage of *V. Lychnitis*, has flowers of a deep-yellow colour, and larger than those of *V. thapsiforme*.

To "E. M. A.," the same correspondent. We have received answers to the following queries, viz.,—"Are there any localities for *Villarsia nymphaeoides* near London?" It grew not long ago above Hammersmith Bridge, on the left-hand side of the towing-path; it probably grows there still. Also between Shepperton and Walton Bridge, in several places. In the latter places it is still to be found.

"At page 337 of the November number of the 'Phytologist' for 1862, you ask—'Where is the natural Kentish locality of *Buxus sempervirens*?' Abundance of Box grows at Box Bush, in the parish of Barming, near

Maidstone; it is in the wood, above the house at Barngit, and in a line between that house and the lane that goes from Barming Heath through the wood to the 'North Pole.' The Box has been there many years, but it is probable it may have been planted as a cover for game, as it is not more than a quarter of a mile from the park palings of Teston Court. It is sometimes gathered and dried by the natives for some use of which I am ignorant."

Carr Hill, Mossley, near Ashton-under-Lyne,
Lancashire, March 2nd, 1863.

To the Editor of the 'Phytologist.'

Sir,—Will you have the kindness to allow me the privilege of appealing to the numerous readers of your valuable journal on behalf of the members of our Botanic Society at Mossley, who, through the stopping of our mills for cotton, are now undergoing the most severe privations. I need not tell you how long the cotton famine has existed, nor of the dreadful ordeal through which we have so far passed, as the various newspapers have made you acquainted with these things in a great measure. If some of our wealthy friends, in those parts of the country, where the stagnation of trade has not reached, will kindly lend us their assistance, we shall feel exceedingly grateful. Anything they may have to spare, either in money or clothing, will be very thankfully received, and shall be glad to make any return that lies in our power. Parties wishing for specimens of such things as grow within 20 miles of Mossley, shall be served to the best of our power. We have got a very fair share of Mosses, and Ferns: among the latter, *Botrychium Lunaria*, *Ophioglossum vulgatum*, *Cystopteris fragilis*, *C. dentata*, and *Polypodium vulgare*, *P. Phegopteris*, *P. Dryopteris*, *P. calcareum*, *Asplenium ruta-muraria*, *A. Trichomanes*, etc. These and others grow in such profusion, that as your Barmouth correspondent observes, there is no fear of them being destroyed. Parties willing to contribute anything to our assistance, or in want of any specimens we can furnish, will please send to the above address, and they will be cheerfully attended to, or any gentleman coming our way will be accompanied to any part of our neighbourhood. Fully relying on the kindness of the brethren of our craft, I remain, on behalf of the members of the Mossley Botanic Society, yours truly,

JAMES WALKER, *Corr. Member.*

Reference: D. H. Buckley, Esq., J. P., of Carr Hill.

ANEMONE APENNINA.

It may be interesting to your readers to learn that *Anemone apennina* is an inhabitant of the North Wolds of Lincolnshire, whence I received specimens at the end of April last. Its locality is in Brocklesby Park, the seat of the Earl of Yarborough, where it covers several acres of ground in the immediate vicinity of the mausoleum, and is thoroughly established. Brocklesby Park is near the small town of Caistor, in the neighbourhood of which several rare plants are to be found, e.g. *Drosera longifolia*, *Corydalis solida*, *Oxalis stricta*, *Trifolium arvense*, *Spiræa Filipendula*, *S. salicifolia*, *Epilobium angustifolium*, *Gentiana Pneumonanthe*, *Atropa Bel-ladonna*, *Linaria minor*, *Galeopsis versicolor*, *Pinguicula vulgaris*, *Anagallis*

tenella, *Alisma ranunculoides*, and very many others. The Rector of Caistor, the Rev. H. Maclean, possesses an extensive and handsome fernery; his extreme kindness to visitors I can vouch for, having myself received proofs of it.

J. BRITTEN.

A NEW SUBSTITUTE FOR COTTON.

(From the 'Independence,' Nov. 8, 1862.)

The Governor-General of Canada has communicated to the Botanical Society specimens and seeds of a new fibre-plant from the Rocky Mountains. This plant, commonly known as the Silk-weed, has been determined to be an *Asclepias*, and is now under experiment in the Botanic Garden at Kensington, C.W. Dr. Hart, the discoverer of the plant, in a communication addressed to Lord Monck, explaining the mode of cultivation of the plant, says: "Its fibre or staple is longer and firmer than cotton, and of a gloss no silk or satin can match. During ten years I have planted cotton in Yazoo, Mississippi Valley. My brand was sought by the Liverpool and Manchester speculator, and brought the highest prices; and on that practical experience I ground my convictions with regard to the Silk-weed." The 'Kingston Whig,' in recommending its cultivation in Canada, says: "Who knows but this fibre-plant, Silk-weed, or *Asclepias*, may, from its hardiness, glossiness, or fibrous texture, yet take the place of cotton, which could not grow in Canada, lying so far north as it does. But this plant, borne from the heights of the Rocky Mountains, may find a more congenial home in the less rigorous climate of Canada."

TO GUERNSEY VISITANTS.

Those who intend going to the Channel Islands, either for a holiday, short excursion, or as permanent residents, should procure a small tract of about thirty pages, on the climate, productions, statistics, economics, etc., of Guernsey and Sark.

A more detailed notice of this useful handbook will appear in some subsequent number. It is entitled, 'A Handbook for Invalids, Geologists, Naturalists, Archæologists, and others.' S. Barbet, Printer and Publisher, 25, High Street, Guernsey. Price 6d.

Communications have been received from

John Sim; W. Winter; T. B. Flower; James Walker; J. S. M.; Sidney Beisly; W. Pamplin; William Mitten; Charles Howie; Rev. W. R. Barnard; W. T. Dyer; G. Wolsey; W. P.; E. M. Attwood; F. Crépin.

RECEIVED FOR REVIEW.

The Banffshire Journal.

Notes on Books.

The Canadian Naturalist and Geologist.

The Flora of Wiltshire, No. 6, continued.

Guernsey, Sark, etc. A Handbook for Invalids, Geologists, Naturalists, etc.

Notes sur quelques Plantes Rares ou Critiques de la Belgique. Troisième Fascicule.

SEAWEEDS FOUND AT BRIGHTON.

List of Marine Algæ found at Brighton and in the Vicinity, with Observations on a few of the most remarkable Plants. By
MRS. MERRIFIELD.

The two principal features of the seacoast at Brighton are its extreme shallowness and the absence of freshwater streams; each of these conditions has its influence on the marine botany of the district.

Such is the shallowness of the coast, that at the distance of three miles there are only six fathoms water; at six miles there are eleven or twelve fathoms, while off Worthing, to the west of Brighton, there are only nine or ten fathoms. Extensive beds of seaweeds exist between Shoreham and Worthing, in from three to four fathoms water, and also south of Worthing, four or five miles from shore; the adjacent soundings being five fathoms. Along the shore lie, at various distances, groups of rocks covered with Algæ, whose position can be recognized in calm, clear weather, at extreme low water, by the purple hue which they (apparently) communicate to the water above them. Algologists will understand that this shallowness of the coast prevents (except to the dredger) access to the rocks on which many of the finer seaweeds grow. For the supply of these we are, therefore, indebted to the tidal influence, and are obliged to be contented with such as are washed ashore; the condition of such waifs being of course dependent on the length of time they have been exposed to the influence of sun and air.

Immediately adjoining the beach of Brighton are low, flat rocks, on which grow *Enteromorpha intestinalis* and *E. compressa*, *Ulvæ*, *Porphyra*, and *Cladophora*, *Polysiphonia nigrescens*, *P. atro-rubescens*, *Ceramium rubrum*, *Rhodymenia palmata*, *Scinaia furcellata*, *Bryopsis plumosa*, *Taonia atomaria*, *Chorda filum*, *C. lomentaria*, and *Laminaria Phyllitis*. At Black Rock, on the eastward of Brighton, the water deepens, and in addition to the above-mentioned plants may be gathered *Griffithsia setacea*, *Gracilaria confervoides*, *Ceramium Deslongchampsii*, *Gymnogongrus Norvegicus*, *G. Griffithsia*, *Ahnfeldtia plicata*, *Cladostephus spongiosus*, *Gelidium corneum* var. *crinale* and var. *clavatum*, *Spha-*

celaria radicans, *Cordylecladia erecta*, *Laminaria saccharina* and *L. digitata*, *Fucus serratus*, and *Desmarestia aculeata*.

No freshwater stream runs into the sea within five or six miles of Brighton. At this distance, on the west, the Adur flows through Shoreham Harbour, where the tide rises about eighteen feet. On the east there is no fresh water nearer than Newhaven Harbour (nine miles off), which is the mouth of the river Ouse. The saltwater ditches and marshes communicating with these estuaries supply weeds peculiar to such situations.

The following list of Algæ, in which I have been careful to include those only which I have myself found, or which I have seen and know to have been collected on this coast, will show that we have in this locality a fair share of these beautiful productions of nature. The number of British species, exclusive of the varieties, included in this list, amount to 192. The list comprises two plants new to England. On these I have to make a few observations.

The first-mentioned Alga is pronounced by Dr. Harvey to be almost identical with *Dasya punicea*, from which it is said to differ only in the length of the articulations of the *ramuli* (small branches). It seems to have been first found by Mrs. Gray, who met with a specimen bearing *stichidia*, at Bognor, in October, 1858. Since that time I have found at Brighton several specimens, with both kinds of fruit. A brief description of the plant will be found in the Appendix to Mrs. Alfred Gatty's recent work on British seaweeds.* As the plant is new to this country, the following more particular description may be acceptable to the reader.

DASYA PUNICEA.

Stem much and irregularly branched, beset with whorls of long, many times dichotomous jointed *ramuli* (branchlets), tapering upwards to a point; articulations 4 to 6 times as long as broad. *Ceramidia* (spore cases) urceolate; *stichidia* linear-lanceolate, tapering to a fine point.

Dasya punicea, Agardh.

HABITAT. Bognor, Mrs. Gray, October, 1858; Brighton, Mrs. Merrifield, July and August, 1859-61.

* 'British Seaweeds,' by Mrs. Alfred Gatty. 4to. Bell and Daldy, London. Dr. Harvey's last classification has been adopted, and this work contains a carefully-compiled "amateurs' synopsis," which will be found extremely useful.

GEOGRAPHICAL DISTRIBUTION. Mediterranean.

DESCRIPTION. *Root* a small disk. *Fronde* 2 to 5½ inches long; about half a line wide; irregularly much-branched. *Principal branches* widely spreading, especially in the specimens bearing *ceramidia*, where they are almost at right angles with the main stem; *axils* spreading. The lower part of the stem naked. The lesser branches, which are numerous, are set throughout with *whorls* at intervals of about two diameters of the branches, with very slender, soft, many times dichotomous *ramuli*, tapering to a fine point; the tips of the branches are crowded. *Articulations of ramuli* 4 to 6 times as long as broad. *Ceramidia* sessile, with a narrow cylindrical neck (shorter than in *D. arbuscula*, but of the same shape), spores densely crowded in a spherical mass. *Stichidia* very numerous, borne on the *ramuli*, narrow, lanceolate, gradually tapering from the middle to an acute apex, straight or gracefully curved, marked with transverse bands at short intervals. Tetraspores numerous, dark-red, contained in the upper divisions of the *stichidia*. *Colour* a rosy red, frequently varied with more or less of a brownish-yellow tint. Stems brownish. *Substance* tender and gelatinous.

REMARKS. In the *form* of the branches the plant is nearer to *D. arbuscula* than any other British species; but it is a larger plant. In specimens bearing *ceramidia*, the branches are more divaricating than in those with *stichidia*. The *ramuli*, which are softer and more flaccid than in any other British species of *Dasya*, are nearer in their form and mode of growth to those of *D. ocellata*. The *stichidia* also resemble in form those of *D. ocellata*. They are very numerous. *Ceramidia* are also numerous, but much less so than *stichidia*; they are sessile, with a narrow cylindrical neck, which is shorter than in *D. arbuscula*, although of the same shape. The spores seem to be ripe early in August; in some of my specimens it may be seen that the drying process has caused them to be discharged from the neck of the capsule.

The plant has not yet been found growing in this country. My specimens, consisting of single fronds, were found floating near the shore at low water. Altogether I must have found from ten to twelve specimens.

Dr. Harvey states that our plant differs from *D. punicea* in the length of the articulations of the *ramuli*, which in the latter are

short. Mrs. Gatty's work contains a notice of a barren specimen of *Dasya* found by Miss Mary Catlow at St. Aubyn's Bay, Jersey, 1858, which, as Dr. Harvey thinks it may prove a distinct species, has been named provisionally *D. Cattloviae*. Mrs. Gatty mentions that externally it bears some likeness to the Australian species *D. Gunniana*; but that its characters come nearest to *D. punicea*, though it is a more robust plant. As the specimen found by Miss Catlow was not in fruit, its identity with our plant could not be proved.

The other plant referred to is a PHYLLOPHORA, which Dr. Harvey thinks is a well-marked variety of *P. rubens*, if not a distinct species. The Professor suggests that intermediate specimens should be sought for. At present there are scarcely sufficient data to settle the question. The new variety has the midrib like that of *P. rubens*, which it also resembles in both kinds of fruit, and in colour.

The general outline of the frond is fan-shaped, but it is subject to many variations. Some specimens bear a close resemblance to *Rhodymenia palmata*, for which it might, when not in fruit, be mistaken, were it not for the constant presence of the midrib. Some fronds are finely laciniated, others are broadly fan-shaped, but more or less laciniated at the margin. Others, again, have the crisped margin of *Rhodophyllis bifida* var. *marginifera*, and of some specimens of *P. membranifolia*.

Like *P. rubens*, the new plant is frequently prolific from the upper end of the midrib, never from the extremity of the frond.

The prettiest and best-marked specimens occur in the summer (I think not earlier than August) and in the autumn. They are cast ashore after gales. Later in the year *P. rubens* begins to appear, though sparingly, and some of the specimens found seem to present a mixed appearance, though they may generally be ascribed to *P. rubens*. From January to March, the normal form of the last-named plant abounds in full luxuriance.

I shall conclude these observations with a few remarks on that curious plant *Codium bursa*.

CODIUM BURSA is most common here in the autumnal and winter months, from September to March. I have, however, found it in every month except June and July.

The specimens are generally washed ashore after storms. During the heavy gales which prevailed from the 26th to the

31st of October, 1861, many fronds, considering the general scarceness of the plant, were thrown on the beach. The plant is known to grow both to the east and west of Brighton, but the habitat is seldom accessible to the algologist. A few years ago, Mr. Pike tells me he waded out as far as some *Codium bursa* which he saw growing; the fronds were then about the size of nuts. Being so small, he would not gather them then, hoping to return for them when sufficiently grown. In the meantime heavy gales came on, and loosened and dispersed the plants, and he thinks broke up the habitat. After that, *Codium bursa* was scarce for some time.

Codium bursa grows on chalk rock, on barnacles, mussels, oysters, *Pecten opercularis*, and pebbles. It is generally entangled with *Rytiphlea pinastroides*, and I have found growing on it young plants of *Sphacelaria Sertularia* and *S. plumosa*,* and also the zoophyte *Sertularia argentea*.

The plant grows sometimes in single fronds; sometimes two, three, and even seven and eight in a group, and adhering to each other; only one of the fronds being immediately attached to the rock. Hence we learn that every part of the frond is prolific. The appearance of one of these *heaped* specimens is somewhat like the figure in the 'Phycologia Britannica' of *Leathesia tuberiformis*, except that the point of attachment is smaller. In no case have I ever seen a specimen with a wide base like the figure of *Codium bursa* in the 'Phycologia.'† The point of attachment is always small. When one frond grows upon another, which is often the case, the junction is formed by interlacing fibres, so strong that it requires some force to separate them.

In form, *Codium bursa* is generally spherical, and always hollow. In young and fresh specimens the substance is thick, firm, and crisp; with age it becomes thinner, and at last an opening is made; hence its name *bursa* (a purse). After exposure, specimens are frequently found collapsed; at other times they are much lacerated, and acquire a flat shape; hence another common appellation, *sea flannel*, which gives a very good idea of the occasional appearance of the plant.

* Now *Chaetopteris plumosa*.

† I believe that what appears to constitute the wide base in the figure, is merely a collapsed frond.

In size *Codium bursa* varies considerably. Some specimens are not larger than a nut, others are so large that one found by Mr. Pike, when folded, covered his head, and hung down his back like a "sou'-wester."

The following list of Algæ has been drawn up in accordance with Professor Harvey's last arrangement, as set forth in Mrs. Gatty's new work, before referred to. Some genera, such as *Ceramium*, *Cladophora*, and *Ulva*, appear to be still unsettled. It is to be hoped that this classification will be final. The changes that are perpetually occurring in botanical arrangement and nomenclature are most puzzling to the student, who has no sooner made himself master of one system of classification than he has to unlearn that, and to learn another.

LIST OF MARINE ALGÆ FOUND AT BRIGHTON, AND IN THE VICINITY.

Explanation of Symbols.—1. Single specimens only. ! Common. !! Very common. R. Rare. RR. Very rare. † Found growing.

MELANOSPERMEE.

Halidrys siliquosa !!!

Cystoseira granulata. February to April, occasionally found.

Cystoseira fœniculacea. October to end of June, occasionally found.

Cystoseira fibrosa. Principally during winter.

Fucus vesiculosus ! †

Fucus vesiculosus, var. *β. spiralis*.

Fucus ceranoides R. Sometimes with tips of fronds inflated.

Fucus serratus ! †.

Fucodium nodosum !

Fucodium canaliculatum R.

Himanthalia lorea !

Desmarestia ligulata R.

Desmarestia aculeata !! *Note.*—Students should be aware that the feathery filaments of this and some other plants of this series owe their green colour to decomposition. Their true colour is citrine.

Desmarestia viridis !

Arthrocladia villosa ! In some seasons, as in 1861, at others rare.

Sporochnus pedunculatus. Same.

Laminaria digitata !!! †.

Laminaria saccharina !!! †. I gathered at Black Rock a remarkable form of this plant, with another frond growing along the centre, thus becoming trilaminar.

Laminaria Phyllitis ! †. In some seasons.

Chorda filum !!! †. More frequently washed ashore.

Chorda lomentaria.

Cutleria multifida R.

Taonia atomaria ! †.

- Dictyota dichotoma* R R.
Stilophora rhizodes R. Plentiful in 1861.
Striaria attenuata. Same.
Punctaria plantaginea R. One or two specimens only.
Punctaria tenuissima R. Same.
Asperococcus compressus ! †. In 1861.
Asperococcus Turneri R., but plentiful in August, 1860.
Asperococcus echinatus R. †. Black Rock.
Mesogloia vermicularis R. In 1861 only.
Mesogloia Griffithsiana. Same.
Mesogloia virescens, var. R. In 1860.
Elachista fucicola !
Elachista scutellata !
Elachista velutina !
Myrionema strangulans !
Myrionema Leclancherii !
Cladostephus verticillatus !
Cladostephus spongiosus ! †. Black Rock.
Chætopteris plumosa R. Young plants on *Codium bursa*, and at root of *Laminaria digitata*. The root of *C. plumosa* is described as a disk ; but when growing on *C. bursa* the root consists of straight, articulated, hyaline fibres, which extend vertically downwards through the substance of *C. bursa*, as if to secure a tighter hold.
Sphacelaria Sertularia R. At roots of *Zostera*, and on *Codium bursa*.
Sphacelaria scoparia !
Sphacelaria cirrhosa !
Sphacelaria radicans ! †. Black Rock.
Ectocarpus siliculosus !! †.
Ectocarpus fenestratus R R 1.
Ectocarpus fasciculatus.
Ectocarpus Hincksie.
Ectocarpus tomentosus.
Ectocarpus pusillus ! R.
Ectocarpus littoralis !
Ectocarpus granulosus !!
Ectocarpus Mertensii !! Rocks below Crescent.

RHODOSPERMEÆ.

- Chondria dasyphylla* ! †. More frequently washed ashore.
Chondria dasyphylla β. slender variety.
Chondria dasyphylla, var. with recurved ramuli. See 'Phycologia Britannica.'
Chondria tenuissima R. Very fine, with fruit of both kinds.
Rhodomela subfusca †. More frequently washed ashore.
Rytiphlæa pinastroides !!!
Polysiphonia formosa ? 1.
Polysiphonia pulvinata R R. June, 1859.
Polysiphonia fibrata, var. *foetidissima*. I have found specimens with tetraspores, but never with capsules.
Polysiphonia elongella R.
Polysiphonia elongata !!

Polysiphonia violacea. Frequent in 1858 and 1859; absent in 1860; rare in 1861.

Polysiphonia Brodiaei l. June, 1859.

Polysiphonia variegata R R, without fruit.

Polysiphonia nigrescens !!! †. In summer small specimens, delicately pinnated, without fruit, and which become very black in drying, are cast ashore.

Polysiphonia atro-rubescens !!! †.

Polysiphonia fastigiata !!!

Polysiphonia byssoides !!!

Dasya coccinea !! In the early spring, young ramuli may be seen sprouting from old fronds of the preceding year.

Dasya coccinea var. *squarrosa*.

Dasya punicea? R R. Specimens with both kinds of fruit, July and August, 1859 and 1861.

Laurencia obtusa ! In October and November, 1858 and 1859; very scarce since; also in January and March.

Laurencia pinnatifida R R l. December, 1861, cast ashore, parasitic on *H. lorea*.

Lomentaria ovalis R. Growing parasitically on *H. lorea* in winter. No fruit found.

Lomentaria kaliformis !!!

Lomentaria kaliformis, var. *β. patens* !

Lomentaria kaliformis, var. *γ. squarrosa*.

Lomentaria reflexa l. November, 1858.

Champia parvula !!!

Wrangelia multifida R. Occasionally very rare..

Wrangelia multifida, var. *β. pilifera*, R R.

Naccaria Wiggii !!! Very fine.

Corallina officinalis !!! †.

Jania corniculata. } I have united these because I have scarcely ever found a specimen in which the horned processes were altogether absent.

Jania rubens. }

Melobesia polymorpha ! †.

Melobesia calcarea. Occasionally brought ashore by fishermen.

Melobesia membranacea. }

Melobesia farinosa. }

Melobesia verrucata. }

Melobesia pustulata. }

! On the smaller Algæ.

Delesseria sinuosa R R l. Autumn, 1861.

Delesseria alata l. September, 1860; growing on *Cystoclonium*.

Delesseria Hypoglossum !! †. More frequently cast ashore, often in very dense tufts.

Delesseria ruscifolia R. August, November, February.

Nitophyllum punctatum R R l. Young plant of var. *ocellatum*, growing at the root of *Zostera*.

Nitophyllum Gmelini R R. July, September.

Nitophyllum laceratum !!!

Nitophyllum laceratum, var. *uncinatum* R.

Sphaerococcus coronopifolius R. In the autumn and winter of 1859-60, abundant after stormy winter; specimens large, and dried dark. I obtained about seventy specimens.

Gracilaria compressa R R l.

- Gracilaria compressa* R R 1.
Gracilaria confervoides !!! †.
Gelidium corneum.
Gelidium corneum, var. *latifolium* 1. Young specimen.
Gelidium corneum, var. *crinale* †.
Gelidium corneum, var. *clavatum*. Growing on woodwork submerged each tide.
 Western aspect.
Polyides rotundus !!! †
Scinaia furcellata !!! †. Rocks below Crescent.
Helminthocladia divaricata R R 1. June, 1859.
Helminthocladia purpurea R R 1. A remarkably fine specimen, in August, 1859.
Wormskioldia sanguinea R. After storms, generally much lacerated.
Plocamium coccineum !!! †. Finest plants washed ashore.
Plocamium coccineum, var. *uncinatum* R.
Rhodymenia palmata !!! †.
Rhodymenia palmata, var. *marginifera*. Also broad palmated forms, but none narrow varieties.
Rhodymenia palmata, var. *simplex*.
Rhodophyllis bifida !!! July to December, normal form !.
Rhodophyllis bifida, var. *ciliata*.
Cordylocladia erecta R †.
Spyridia filamentosa R 1. June, 1861.
Phyllophora rubens !! Very common in 1860.
Phyllophora rubens, var. or new species, 1858.
Phyllophora membranifolia !! A very variable plant, also var. *stellata*.
Gymnogongrus Griffithsia R †. Black Rock; July to autumn.
Gymnogongrus norvegicus !!! †. Black Rock; September to March.
Ahnfeldtia plicata ! †. Black Rock.
Cystoclonium purpurascens !!
Gigartina acicularis 1. On *H. lorea*; December, 1861.
Chondrus crispus !!!!
Halymenia ligulata !
Halymenia ligulata, var. *α. dichotoma* R.
Halymenia ligulata, var. *β. ramentacea* !
Chylocladia clavellosa !!! A slender variety also.
Chylocladia articulata R R. Two specimens (young) only, one growing at Black Rock, the other on *H. lorea*, June, 1860.
Furcellaria fastigiata !
Schizymenia edulis ! †. More frequently cast ashore.
Ceramium rubrum !!!!
Ceramium rubrum, var. *botryocarpum*.
Ceramium rubrum decurrens.
Ceramium Deslongchampsii R †.
Ceramium diaphanum. Abundant, and of large size, in autumn of 1861.
Ceramium nodosum !!
Ceramium fastigiatum R. August, 1861.
Ceramium echionotum. Occasionally cast ashore.
Ceramium ciliatum R R 1. January, 1861; a young specimen, growing on *Fucus*.
Dudresnaia coccinea. Frequently abundant, and in fine condition; at other times rare.

Ptilota plumosa R R 1. Young plant, growing on *Halurus equisetifolius*; March, 1861.

Ptilota elegans R R 1. August, 1861.

Halurus equisetifolius R. December to March and May; Never found in fruit.

Griffithsia barbata R. End of June to October; generally rare.

Griffithsia devoniensis R R. July and August, 1861.

Griffithsia corallina !! †. More frequently cast ashore; often in dense masses.

Griffithsia setacea !!! †. Black Rock; very fine.

Corynospora pedicellata !!

Corynospora pedicellata, var. ? One form of the plant differs so much in appearance from the normal form, that it seems to be entitled to be called a variety.

Seirospora Griffithsiana R. Very fine; I possess a specimen which measures five inches in length.

Callithamnion plumula R.

Callithamnion cruciatum R R 1. September, 1858.

Callithamnion Turneri.

Callithamnion Hookeri R 1. October, 1858.

Callithamnion pluma R.

Callithamnion brachiatum. February, 1863; on *Desmarestia aculeata*.

Callithamnion roseum. Very fine on oyster-beds at Shoreham Harbour.

Callithamnion roseum, var.

Callithamnion Borreri R R. Parasitical on *H. lorea*; January, 1860.

Callithamnion byssoideum. On Algæ.

Callithamnion polyspermum var. *Grevillei* !!! †. Growing on west, north, and south (never on east) sides of woodwork, submerged every tide. The normal form is rare.

Callithamnion thuyoideum R R 1. In 1862.

Callithamnion corymbosum. Occasionally found.

Callithamnion mesocarpum R R. On smaller Algæ; June, 1861.

Callithamnion sparsum R R.

Callithamnion Daviesii, and
var. *virgatulum*. } One of the most beautiful specimens I have ever
seen was growing on a knot of tow, the fibres of
which were studded with the beautiful little tufts.

CHLOROSPERMEÆ.

Codium bursa R †. August to March inclusive; generally washed ashore after storms.

Vaucheria †. Shoreham Harbour; not in fruit.

Bryopsis plumosa †. Rocks below Crescent.

Porphyra laciniata !!! †.

Porphyra vulgaris ! †.

Bangia fusco-purpurea †. On a groyne at Black Rock.

Enteromorpha intestinalis !! †.

Enteromorpha compressa !!! †.

Enteromorpha erecta !!! †.

Enteromorpha erecta, var. *clathrata* ! †.

Enteromorpha percursa †. Salt-marshes and ditches; Lancing.

Cladophora Hutchinsiae.

Cladophora diffusa.

Cladophora rupestris ! †.

Cladophora late-virens !! †.

Cladophora flexuosa.
Cladophora gracilis !
Cladophora refracta ! †.
Cladophora albida !
Cladophora lanosa ! †. Rocks below Crescent.
Cladophora glaucescens.
Cladophora flavescens †. Saltwater ditches at Lancing.
Cladophora fracta †. Saltwater ditches at Lancing.
Hormotrichum Cutleriæ ! With *Lyngbya ferruginea*.
Conferva littorea. Saltwater ditches at Lancing.
Conferva Linum. Saltwater ditches at Lancing.
Rivularia atra.
Calothrix confervicola !
Calothrix pannosa ?
Lyngbya ferruginea. Saltwater marshes, Lancing.
Oscillatoria littoralis.
Oscillatoria nigro-viridis. With *Lyngbya ferruginea*.
Spirulina tenuissima. Developed in saltwater tank.
Sphærozyga Carmichaeli. With decaying Algae, in pools near the shore.

BOTANICAL LETTERS FROM ARGYLESHIRE.

A Seat on the Shore at West Port. By JAMES LOTHIAN.

Sir,—Sweet as a ramble is through the woodland glade,—light, joyous, and free as one feels roaming over mountain and valley in quest of nature's charms and treasures,—there are scenes and objects that delight the eye and make the heart glad as well, whether we look at them during the cool breezes of spring, or when fanned by the more balmy winds of summer and autumn ; whether the great deep lies stretched before us calm and placid as the bosom of the mountain lake, or when, agitated by the wintry blast, raises the great crested waves forming mountain and valley before us, and making a noise like distant thunder upon the rocky shore. Then there is something awful and sublime—something that delights the student of nature or disposes him for either delights or reverential thoughts. I never take the fields, whether on a botanical excursion or otherwise, without my companion—a small pocket portfolio, which serves the twofold purpose of a note- and sketch-book. On my return, I very generally put it aside in a drawer, where it lies until something or other brings it in course again. Just now, in rummaging a drawer lately, I met my silent companion, and on carelessly opening it my eye alighted on some notes, which, for lack of leisure for

something better, I string together for your amusement, courteous reader!

During last summer, business had led me, in company with a friend, to visit the neighbourhood of West Port, where we were engaged most of the day. But where is West Port?—is a question you may probably ask. Well, West Port is a point on the west shores of Kintyre, five miles from Campbeltown, on the road leading to Inverary, and about one mile beyond the primitive hamlet of Kilkennie, where there is an old rural burying-ground with the ruins of an ancient chapel in the centre of it, with a few scattered cottages, a smithy, a public-house and a school-house,—and is certainly a fair specimen of a Scotch hamlet; situated in a sheltered hollow, with a small burn, or prattling rivulet, flowing in a tortuous course through the clachan.

Part of the land at this rural spot is the property of a gentleman, a native of Cambria's rugged hills and sunny vales, where he chiefly resides; but most of the land at this point, as well as the chief portion of the whole district, is the property of his Grace the Duke of Argyle. About a mile beyond this rural hamlet, at West Port, can be obtained perhaps the most magnificent views on this coast, and which, on a fine summer or autumn afternoon or evening, are beautiful beyond description; where—

“No gale but the balmy Favonian is blowing,
In coral groves resting, the winds are asleep;
And rich in the sunbeam, yon pennants are glowing,
That tinge with their colours the silvery deep.”

My friend and myself having had a good deal of walking through cultivated fields and meadows, and heathy uplands, during the heat of the day, felt ourselves getting rather tired, if not somewhat fagged, as the afternoon was gliding towards evening; and having completed our business, the delightfully cool breeze tempted us to take a seat on the top of a grey lichen-covered rocky ridge, overhanging the sea, and commanding some charming views. The cool breeze rolled in most refreshingly towards the land, mingling with the perfume of the flowers around us, and cooled our faces, which the powerful beams of the sun had overheated.

What a glorious splendour is displayed in that setting-sun! descending as it were into the ocean in the far west, like a ball of fire or the most richly burnished gold, its rays gilding the

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dark headlands of the Irish coast south-westwards towards Sligo, as well as the western shores of the Mull of Kintyre, the Mull of Oa, in Islay,—nay, the very ocean itself, partaking of the same fiery refulgence. Yonder is a large ship from the North Channel, with all her snowy sails spread out to catch every breath of wind, to enable her to clear the land and get onwards to the breast of the ocean. The clear blue sky is still partaking of the golden tinge reflected by the rays of the setting sun.

Immediately beneath, are the bast hills on the shores of West Port, consisting of peat-hills, covered with bast.

Stretching away southwards towards the wide curving Bay of Machrihanish and Salt Pans village, on the south side of the bay, cows and sheep are grazing among the long bent, and one or two specimens of humanity, wanderers, are slowly pacing along the beach.

Just as we are conversing about the beauties of the landscape before us, and upon the eve of rising from our seat, we observe a tall, middle-aged individual coming towards us, who, upon our closer examination of him, I recognize as an enthusiastic amateur botanist, who is very soon seated upon the green grass beside us, admiring the gorgeous splendour of the evening, and the scenes around. Our new acquaintance informs us that he too has been rambling among the hills and glens all day, in search of wild flowers. The names of those he informed me he had met with, I then noted down, many of which, although only in passing hastily, I observed myself during this day; and if opportunity be granted me this season, I mean to test the accuracy of the whole, which is but a tithe of the plants to be found about West Port and neighbourhood; and as I am preparing a special catalogue for our Peninsular Flora, I hope ere long to be able to enumerate a greater array of plants and their habitats. Meantime I subjoin the names noted:—

<i>Gentiana campestris.</i>	<i>Asplenium Adiantum-nigrum.</i>	<i>Vicia sylvatica.</i>
<i>Armeria maritima.</i>		<i>Vicia Cracca.</i>
<i>Lithospermum maritimum.</i>	<i>Scolopendrium, 1 sp. and 2 vars.</i>	<i>Habenaria bifolia.</i>
<i>Sedum acre.</i>		<i>Habenaria alba.</i>
<i>Aster Tripolium.</i>	<i>Botrychium Lunaria.</i>	<i>Habenaria viridis.</i>
<i>Convolvulus Soldanella.</i>	<i>Rubus saxatilis.</i>	<i>Pinguicula lusitanica.</i>
<i>Cakile maritima.</i>	<i>Salix nigricans.</i>	<i>Orchis mascula.</i>
<i>Crambe maritima.</i>	<i>Salix Forbesii?</i>	<i>Orchis maculata.</i>
<i>Asplenium marinum.</i>	<i>Galium saxatile.</i>	<i>Orchis latifolia.</i>
<i>Asplenium Trichomanes.</i>	<i>Galium palustre.</i>	<i>Solidago Virga-aurea.</i>

—the last waving like golden feathers in the clefts of the rocks, which are crowned by the *Anthyllis Vulneraria*. I had hardly noted down those plants, when our attention was arrested by an immense number of wild pigeons issuing from some caves to our right, where our companion informed us they were in hundreds, bringing out their young in the caves and fissures of the rocks. They were chiefly of a beautiful silver-grey, neck and breast of some white, others with a white ring round the neck, and the rest of the body of a dark slate-colour. Farmers complain that they do them great injury, but they do not consider the service those beautiful birds render them.

After many kind invitations from our friend to accompany him to his beautifully-situated retired cottage about a mile distant, which time prevented our accepting, we took our respective ways homewards. We had still three miles before us.

We had now reached the public highway, and my companion, who was first, had got over the fence, when he was saluted by a little thin-visaged, elderly man, dressed in what is commonly termed shabby black. From the glance I had of him, I observed the expressions of the face rather peculiar, partaking of a sort of sober, serious, sombre cast, and I thought he might be an itinerant preacher, or perhaps a schoolmaster in some remote upland district, on his way homewards from town. I had just got over the fence, and had a few specimens carrying in my hand, not having a vasculum with me, and having stood for a moment, he looked round, addressing himself to me, "I understand you are a botanist." I replied that I wished I was more worthy of the name. "I see you have got some wild flowers," he further remarked; "they are very beautiful, but not to be compared to the flower of renown. What I dislike of you naturalists and men of science," said he, "is that you are not so careful as you ought to be, allowing yourselves to be too much engrossed by the allurements and fascinations of science, too often placing it in the place of revealed religion." I acknowledge I was rather surprised at this onslaught against men of science, and was nigh being tempted to resent; however, I merely answered by saying, "You are aware, I presume, that it is one of the injunctions of our Saviour to consider the Lilies of the field, how they grow; and I must say that in my own experience the greatest error I find is in the fact that the theologian and naturalist have stood

too long apart; that every true Christian could read both the 'book of nature' and revelation, and ever found them in strict harmony. Both were given to erring men for great ends, and I trusted the day had already dawned when all would read and study both; and sure I was that every genuine botanist and naturalist, while he studied nature, found in his own experience that while he studied nature, it enabled him to look up with faith, humility, and gratitude to nature's wise and beneficent Author.

"And, oft with her communing thus,
A higher joy is given,
From nature up to nature's God
Our thoughts are wing'd to Heaven."

This little, singular man, however, shook his head, and appeared to have allowed the one small idea to nestle in his brain, that all naturalists and botanists were a tribe handed over to infidelity. Time would not permit a continuance of our discussion. We parted, but, before doing so, I invited him to do me the honour of a call when he next came to town, when I felt confident I could convince him that naturalists were not what he represented them to be. My companion, a shrewd businessman, laughed heartily at this man's notion, which he attributed to a certain amount of ignorance and wrong-headedness. I understood that this singular individual was a Chartist, connected with a religious sect, who kept him constantly travelling, to sow the good seed and to root up the *natural weeds*.

The shadows of evening were now fast closing around us. The dew was forming on the vegetation of both field and meadow. The *landrail*, or *corn-crake*, was busy; though unseen, he was not unheard, among the leafy green corn. Once or twice we tried to catch it, but in vain; it ceased uttering its singular croak, which was soon heard in the remote distance. The odours of the Honeysuckle and Queen-of-the-Meadow (*Spiræa ulmaria*) made amends for the harsh music wherewith the corn-crake tried to cheer our walk; and as we reached our homes the evening star, with countless companions, glistened in the western sky.

ADDITIONAL PLANTS AT STOKE POGIS.

Additional Plants observed near Stoke Pogis, Bucks., July, 1862.

By W. T. DYER.

(Vide 'Phytologist,' vol. v., pp. 168-171, and 366-368.)

Ranunculus Baudotii? Growing in great plenty on the margin of a pond near Stoke.

Ranunculus arvensis. Fields.

Helleborus fœtidus. Near Windsor.

Papaver dubium. Near Windsor.

Fragaria vesca, fructu albo. Near Stoke Common.

Rosa rubiginosa. Stoke Common. Gerard's Cross.

Ægopodium Podagraria.

Enanthe Phellandrium. Thames side, Eton.

Angelica sylvestris. Burnham Beeches.

Torilis infesta. Slough Railway Station.

Viburnum Lantana. Near Stoke.

Galium Mollugo. Hedges.

Anthemis Cotula. Fields.

Vaccinium Myrtillus. Stoke Common.

Pyrola minor. Burnham Beeches.

Vinca minor. Lane near Stoke.

Vinca major. Lane near Stoke.

Villarsia nymphaeoides. Still parts of the Thames at Eton.

Antirrhinum Orontium. Plentiful in cornfields about Stoke.

Orobanche minor. Clover-field at Windsor.

Mentha sativa. Fields.

Orchis maculata. Stoke Common.

Allium vineale. Near Maidenhead Bridge.

Scirpus fluitans. Pools near borders of Burnham Beeches.

Triodia decumbens. Stoke Common.

Brachypodium sylvaticum. Lanes and hedges.

Polystichum aculeatum var. *β. lobatum.* Black Park.

Reviews.

Vegetable Morphology; its history and present condition. By
MAXWELL T. MASTERS, F.L.S., M.R.C.S., etc.

(From a Correspondent.)

This brochure on vegetable morphology is an additional proof

of our continuous progress in literary erudition, and also of the truth of the trite remark made by the wisest man, "that there is nothing new under the sun. Is there anything whereof it may be said, See this is new; it hath been already of old time, which was before us?"

The simple or unlearned portion of humanity naturally infers that "as new names are imposed only on new things," *nova nomina in res novas imponenda*, the modern term *morphology*, or the doctrine of the formation, configuration (shape), adaptation, position, etc., of the organs of vegetation was a novelty first discovered by a celebrated German poet, and gradually adopted by the hard-headed, unimaginative sons of science. It will be gratifying, especially to the orthodox, to be informed that this new learning about the formative energies of nature does not contradict Solomon's adage, a saying of the wisest of men.

If our readers will take the trouble to read this tract on Morphology, or even this notice of it, they will learn, as we have, to our great contentment, that "there is nothing new under the sun." The present age has made so great strides in learning, that it is a question whether our literary and scientific attainments have not advanced *pari passu*, with equal rapidity. We do not know who can answer the question—who is the original discoverer of morphology? but we can now tell those interested in these and similar inquiries, that the modern doctrines about the simplicity of organization, unity of type, organic similarities, etc., included under the scientific word MORPHOLOGY, was not first discovered by Goethe, nor by Linnæus, nor by Wolff, nor by Jung, nor by Albertus Magnus, nor by Theophrastus, nor by Aristotle,—though this eminent sage, the earliest and the most systematic of the ancient philosophers, was the first who clearly enunciated this principle. For it may be inferred that it was no discovery of his, but that he received it from his contemporaries, and fixed it as one of the canons of his philosophical system.

May it not be concluded that this, and many other discoveries claimed by modern *savants*, descended to these illustrious ancients and moderns from the first man, the original parent and founder of the human family?

May it not be inferred that it was no discovery of Aristotle's, but that he derived this fact, among many other equally important

scientific discoveries, not from the first man, the original parent of the human race, but from his contemporaries and predecessors, the sages of ancient Greece?

It has been said, not in banter, but in sober seriousness, that the binary and ternary systems of classification, or the Linnæan system of Cryptogamous and Phanerogamous plants, and also the threefold classification, the more recent inventions of Jussieu, Decandolle, Endlicher, Fries, etc., are to be found in the first chapter of the first book of Moses, called Genesis. And hence the *vulgus profanum*, the illiterate and the unphilosophic, are emboldened to surmise, and *proh pudor*, "shame befall them," are not afraid to insinuate that there has been no great discovery after all.

Several years ago, Dr. Drummond published a spicy little book on natural systems of botany, containing many caustic remarks on classification, terminology, and especially on MORPHOLOGY, a work which several of our friends and correspondents have read and enjoyed. If we understand the gist of the Doctor's treatise, he does not give the morphologists much credit for their discoveries and inventions. He shows with considerable force and acuteness, certainly with much jocularly, mingled with sarcastic poignancy, that these so-called systems and discoveries are inconsistent and vague, or that their expositors have not been happy in the selection of the terms whereby they express the *new learning*.

That there is some truth in what Dr. Drummond advanced, may be inferred from the mutability of the new phraseology. It is possible that some of the newly invented words were causes of grief to their original inventors. The terms *morphosis*, *morphology*, *meta. orphosis* are not exactly synonymous; they mean respectively *formation* (the act of forming), the *law or doctrine of form* (figure, shape), *change of form*. Do any of these words express exactly what botanists mean to express when they speak or write about the formative and structural energies of vegetation? Unhappily, the scientific investigators despise the niceties of language. They rarely condescend to state the precise import or sense in which they understand and apply these terms. Hence the mystification of science, and the ridicule thrown on the logic of its professors.

It may be asserted that Nature is no bungler; she does not

fail, either for want of ingenuity or of materials, in accomplishing her original intention. Who will maintain, for example, that she intended to make a stem, but failed for want of formative energy in the plant, and could only produce a leaf, or it may be only a spine? Nobody will assert this.

The examples of such accidental aberrations from what is called the normal or common type, like degeneration, multiplication, etc., are very unfrequent; and when they do occur, their occurrence is owing, not to a latent or mysterious cause, but to some accidental change in circumstances which affect or modify the normal development of the plant. In botany, and in zoology also, there is and there can be no change nor alteration, nor modification of one organ into another. When botanists write and say that the pistil or pericarp is only an altered leaf, they either state what is not true, or they misapply the words. They may be acquitted of the former, but may they not be justly charged with altering or modifying the usual sense of the Queen's English?

The recent researches and discoveries in physiology, both vegetable and animal, (thanks to the inventors of powerful magnifiers, and a thousand benedictions on the patient and ingenious observers,) have taught us that there are but a very few primordial types or forms which by subsequent growth (development is not the right word, though commonly used) produce so many complicated organisms, varying quite as much in their utilities as in their multiform appearances. All this amazing variety of qualities, structures, forms, sizes, durations, etc., is naturally produced without the change of any one organ into another, and also without any suppression of parts.

How, it may be asked, can an organ—say, for instance, a leaf—be changed into an apple, or into a peach, or even into a pistil? The latter, viz. the fruits or the carpels, never had any previous existence in a foliaceous embryonic condition. They always existed in the state wherein they are manifest to our senses. Surely a thing cannot be changed which never existed, never became a thing, *i. e.* a leaf; and never was intended by nature to become a leaf. Again, how can parts be suppressed which never existed?

The writer knows by experience the difficulty of persuading the curious inquirer that there is a suppression of a petal, and

the augmentation of a stamen in the Crucifers. Also of the *vice versa* process in the *Labiata*, where one stamen is usually deficient, and sometimes three. The doctrine is frequently received with considerable reluctance, and sometimes with unmistakable tokens of unbelief.

Morphology does not *now* present so glaring absurdities as passed current among its votaries in the earlier stages of its progress towards maturity. We hear no more about the identity of a grain of wheat and a single leaf in a state of degeneration. What would be the consequence if this so-called degeneration were to cease? That we should have no bread, nor biscuits either.

The extreme views of the original modern propounders of the principles of morphology are now somewhat modified, if their language be taken as the exponent of their opinions. They have probably abandoned their theory that the carpels, seeds, ovules, etc., were originally leaves. For this concession to popular opinion, the less scientific part of mankind should be grateful. But there is another class of inquirers who will persist in giving utterance to the ancient query, *Cui bono*? This is an eminently practical and utilitarian age; and those who propound novelties, either simple or complex, abstruse or obvious, should be able to tell us what we may expect to gain by the adoption of their discoveries.

Physiological investigations must of necessity always dip deeper and soar higher than common observations. They must descend below the surface, and sometimes they may be excused if they take a flight into the airy regions of generalization and hypothesis. But it is certain that they should never contradict experience and common sense. The change or suppression or duplication of hypothetic or only possible organs is too transcendental a subject for the comprehension of ordinary minds. It cannot possibly engage much of their concern, interest, or sympathy.

Besides this, the science of morphology, as expounded by its professors, appears to offer only minute advantages, either to the systematic or to the descriptive or utilitarian students of vegetation. Perhaps these unbelievers in the potentiality of the new doctrines look at them through the wrong end of the telescopic tube; but what the most learned of its advocates advance in its behalf does not help to solve many practical difficulties. The morphologists indeed profess to explain certain anomalies in the

number and position of organs, on what they are pleased to call morphological principles; but are these explanations successful? When we are told that the abnormal situation of the stamens in the Primrose is due to a *suppression*, or, as it is now called, a non-development of an outer series of stamens, which, if present, would have occupied an alternate position, both in relation to the lobes of the corolla and to the existing series of stamens, we may receive or reject the hypothesis. This may be true; but a possible truth is not one on which a prudent person would like to place implicit reliance; but, granting its truth, the advantage to science by this discovery is infinitesimally small.

A Primrose with ten stamens would be about as aberrant a form as a Pink with five. Who would establish a law on such a fact, even if it were one? That there are laws to which all diversities of structure, position, number, and form can be referred, no observant naturalist will dispute. Also, every impartial and candid student will admit the obligations of science to those patient observers who have recently added so much to our knowledge of structure and physiology. But when morphology is obtruded on us, as a distinct department of knowledge, to which it is asserted that we owe much, our curiosity is excited to learn the extent of our obligations. When the vegetable physiologist asserts the principle of unity of type, intrinsic identity of leaf and fruit, he may be expressing morphological, but not logical truths.

But, granting the absence of all inconsistency and obscurity, and assuming that the congruency of the entire science of morphology is as patent as the symmetry of the plant whose structure it professes to expound, what have we gained from its adoption? Utility is the practical test whereby all judicious people estimate novelties or discoveries in natural or experimental philosophy. Therefore, as the logician would say, if every invention, or discovery, or system is to be valued on this principle, what is the worth of morphology? Can it tell why one Carrot is strong or rank, unfit to be eaten, and another tender and delicately flavoured? Does morphology account for some stems being straight, others bending at the base and then erect, and a third class flexuous or zigzag? Why does the Hop, the Honeysuckle, and the Bindweed climb around certain plants, and in one certain direction? Why does the Vine clasp the Elm and shrink from the

Ivy? Why is the Apple-tree "uneasy seated by funereal Yew or Walnut"?

Morphology cannot answer these apparently simple questions; the laws of deduplication, degeneration, suppression, and non-development solve no difficulties. Idiosyncrasy, the individual peculiarity originally given by the Almighty Creator to the humblest as well as to the highest created being, is the key which opens all the mysterious natural and intellectual tendencies of organized and intelligent creatures. What a simple organization! what complex results! Individual, vital, formative energy enables a simple cell, or a small organic entity, which we call a spore or a seed, to elaborate and assimilate from the earth, or the water, or the atmosphere, substances necessary for its own vegetative and reproductive purposes, and when these are accomplished, it ceases to exist, or it continues for a season in a dormant condition.

There is no real, nor actual, nor palpable metamorphosis nor change, neither in animals nor in plants. A leaf never becomes a stem nor a pericarp. No physiologist nor morphologist makes this assertion; he only means to state that the material or tissues which under one series of causes would have produced leaves, under another will produce stamens, or petals, or pericarps. Every plant, and animal too for that matter, is composed of certain tissues which in the seed or spore are of a very simple uniform character.

If the morphologist does not mean this, it may surely be permitted us to ask what he does mean. The physiologist tells us that the simplest of the tissues, the CELL, is so modified by idiosyncratic energy that all the tissues are referable to it; and, by the modification of these tissues, roots, stems, leaves, flowers, and fruit are produced. It surely needs no ghost to tell us this! for of what else could they be produced? Has the morphologist any mystic or latent sense lurking under his terminology? People may be excused for wishing to know what is the esoteric doctrine. They know the exoteric. All tissues are analogous in vegetables derived from the primordial reproductive matter and from the various materials which it absorbs and assimilates, as animal nutriment taken into the stomach is converted into blood, etc., undergoing a chemical change, and becoming fluid, solid, fibrous, gristly, osseous, integumentary, carneous, etc. These may be

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called all modifications of the same original tissues ; but who will say that they are identical organs ?

From analogy, but not from morphology, it must be inferred that leaf and pericarp are as distinct as horns, hide, and bone are from blood, fat, and fibre.

Considering the almost infinite number of plants that exist and have existed since time began, the paucity of aberrant forms, numbers, and positions,—not their multitude,—is marvellous. It is a greater miracle, because it manifests a larger display of wisdom and goodness, that the sun rises every day, than that the same luminary stood still in the times of Joshua, and retrograded in the days of Hezekiah. It is a greater marvel that plants preserve a sort of uniformity in species, genera, and orders, than it is to find a leaf or a plant where there should be a carpel, as we sometimes see in the White Clover, and in the Alpine Sheep's Fescue. These are but like unity, or one, compared with the myriads of millions of normal forms.

Where was the organic unity, the belauded discovery of Goethe, in the Garden of Eden, when the trees yielding fruit were created bearing fruit ? and where was the transition stage or passage from a leaf to a carpel, and from a petal to a stamen, when the herb yielding seed first sprang from the bosom of the bounteous earth at the command of the Creator ?

This unity of organization and progressive development savour not a little of certain doctrines which were promulgated above twenty years ago, and which their author never has acknowledged, although they met with a flattering reception, and the work on which they were expounded was one of the most popular of that period.

We cheerfully admit our obligations to the amiable author of this essay or article on the History of Morphology, especially for telling us that the science was discovered above two thousand years before it got a sponsor or a name. It was a sturdy bantling many centuries ere Goethe was honoured with its paternity. It appears to have had many-dry nurses, tutors and masters since it leaped from the head of Aristotle, like Minerva from that of Jupiter ; but, unlike this celestial heroine, it appeared not completely equipped. Many of its weak points have been detected and exposed. Both ancient and modern doctors have been wrangling and squabbling about the birth, the

breeding, and the utility of the babe, now more than twice as old as Methuselah.

If not asking too much in a quarter where we have no title to ask for anything, we do earnestly desire to know or learn, or be told what is the precise meaning of these words of learned length and ominous sound, viz. morphology, intrinsic identity of organs, organic unity, homologous organs, ('homologous' applied to mathematical truths is intelligible,)—who can tell what organs are so?

Would it not be worth while to explain both the nature and capabilities of the science? As a game or amusement of scientific puzzles it may be ornamental and useful to those who delight in abstruse learned or scientific trifling; but its service in explaining the history of vegetation appears to some as beneficial as an *ignis fatuus* is to the benighted wanderer in the cloudy and dark night.

Far be it from us to prejudge, much less condemn, a subject which we do not understand. We seek enlightenment; and if Morphology does throw light on our path, and help the uninstructed to thread the intricate ways of knowledge, we shall not be the last to sound the trumpet of its praise. If it be what many other abstruse investigations are, a mere jangle of wordy discussion, we will warn our readers to eschew it as they would any other profitless dispute, lest it should turn out like a bargain between a farmer and a horse-jockey. Farmer Hodge sold a steed to a horse-dealer,—as the story-book or Joe Miller tells us,—and the latter, after paying the money, requested the farmer to tell him if the animal had any faults? The farmer answered, "No he had but one." "What is it?" said the other. "If you let him out of your hand, you can scarcely ever catch him." "Oh!" said the jockey, "is that all?" "No," said the farmer, "I forgot to tell you that he is good for nothing when you have caught him."

British Museum, March, 1863.

[The Editor begs to apologize to the amiable author of the 'History and Present Condition of Morphology,' the review of which was mislaid and forgotten.]

Flora of Preston and the Neighbourhood. Part III. By
MR. CHARLES JOSEPH ASHFIELD.

Our readers are referred to previous numbers of the 'Phytologist' for notices of the Flora of Preston. The second and third Parts are reviewed in the 'Phytologist' for September, 1861.

The following rare species, along with more common plants, are reported in this the third part of the Preston Flora:—

Hippurus vulgaris, *Crocus vernus*, *Dipsacus fullonum*, *Potamogeton rufescens*, *Primula farinosa*, *Convolvulus sepium*, *Claytonia perfoliata*, *Myrrhis odorata*, *Meum athamanticum*, *Bupleurum rotundifolium*, *Convallaria multiflora*, *C. majalis*, *Meconopsis cambrica*, *Trollius europæus*, *Aquilegia vulgaris*, *Lamium maculatum*, *Bartsia viscosa*, *Camelina sativa*, *Geranium columbinum*, *G. lucidum*, *Corydalis lutea*, *Tragopogon porrifolius*, *Cichorium Intybus*, *Senecio Saracenicum*, *Verbascum Thapsus*, *Epipactis latifolia*, *Carex fulva*, *Grammitis Ceterach*, *Botrychium Lunaria*.

A few remarks on the above list will not be irrelevant; they are partly addressed to our correspondent, the author of the list, and partly to some of our readers, and it is the writer's wish that they may be useful to all who think them worth a perusal.

Claytonia perfoliata has been reported as a naturalized plant from many counties, and quite recently from Norfolk, Middlesex, and Lancashire. On the other hand, the perennial *Claytonia alsinoides* has been reported from Derbyshire by Mr. Baxter, from Perth by Mr. Sim, who finds it in more than one place, and by a Glasgow correspondent, who has seen it near the western metropolis. In all these localities the plant is said to be a native, or to have all the accidents of a native plant. No one has reported this as an apparently naturalized species, though the more common one, *C. perfoliata*, has always been reported as a semi-naturalized alien.

The rose- or pink-coloured variety of *Convolvulus sepium* is a Lancashire plant. It has been seen in Kent, at Aylsham, not far from Maidstone, where it was observed in 1857. It is also recorded as a variety by Sir W. J. Hooker, in his 'British Flora,' third edition, 1834.

Myrrhis odorata has been set among the aliens by a great authority on phytogeography; but those who are best qualified

to judge, viz. the resident botanists of Lancashire and West Yorkshire, have no doubt about the genuineness of this plant as a native production.

This fact teaches us, or should teach us, that it is dangerous to generalize. For example, the writer has never seen the Myrrh truly wild in Scotland, though it may be so for all that. It has been reported as once existing wild in Essex; but this is rather a wide leap for a plant to take. It is wild in the north-west of England. This example is given as a warning that though *Myrrhis odorata* be a very suspicious native in Scotland, and a suspected alien in some parts of England, it is truly wild in the Craven district of Yorkshire, Westmoreland, Lancashire, etc.; and it is not impossible nor incredible that it may have been wild in Essex.

We hope our excellent correspondent will either himself settle the nomenclature of the Lytham *Enanthe*, or help us to identify the plant which grows on these sands.

The rare *Meum athamanticum*, the Highlanders' tobacco, has been discovered by Mr. Ashfield in a pasture-field at Piethorn, in Butterworth, very abundant. Mr. Grindon has also the honour of having published another station, viz. Whiteley Dean, a moor near Milnrow. (See Mr. L. Grindon's 'Flora of Manchester.')

A hitherto unrecorded locality for the Lily-of-the-Valley is recorded in this third part of the Preston Flora. The above hitherto unknown (?) locality is in a ravine near the Heald, Barnacre, or in a plantation in Calder Vale, near Milnrow.

A still rarer species of *Convallaria*, viz. *C. multiflora*, has been seen by our author "in a hedge near Milnrow, with every appearance of being wild." A plant of the same species was discovered many years ago in a hedge at Albury, near Guildford, Surrey, and this plant had some appearance of being wild; but appearances sometimes mislead observers. This species has been long cultivated, both for ornamental and useful purposes, and its claims to wildness are modified by circumstances. Where this plant abounds, as it does in Hampshire, it grows in woods, and its wildness is there unquestionable. But a straggler now and then appearing far from its proper site is liable to be deemed a suspected introduction.

We hope the energetic and successful author of this list of

Lancashire beauties will clear up the doubt about Dingley or Dinkley Wood, near Ribchester, Master Gerard's ancient locality for *Maianthemum bifolium*.

This is a plant which can readily be found, and as readily identified. The old cuts in Gerard and Parkinson will help any observer to satisfy himself about the identity of the species. It also, like the Lily-of-the-Valley, grows in close patches, almost excluding everything else. It may be looked for any time in May.

We grieve to hear that *Anemone Pulsatilla* is still a desideratum in Lancashire. Even Little Purton, its assigned locality, is unknown. Still, our faith in Mr. Knowlton's accuracy and knowledge is unshaken. Mr. Knowlton was a botanist as well as a gardener, a man of intelligence and observation, and an antiquarian to boot. His reputation alone would entitle him to implicit credence about a more obscure subject than the appearance of millions of Anemones near Lancaster.

Lamium maculatum is reported from several localities, viz. near Ribchester Bridge, Longridge, Bamber Bridge, Leyland Road, etc., "probably introduced." Query,—by whom? When a plant is introduced, the introducer has some object in its introduction; but where we have seen this plant, except in gardens, it appears to have either introduced itself in a Paul Pry-like manner, modestly hinting, by its choice of locality, that it was no intruder, like Mr. Poole's once celebrated hero, but on the principle of natural selection, took possession of a place suited to its propensities, and where it was in little danger of being eradicated.

The admirers of Gerard's 'Herball,' and they are many, will be gratified to learn that Mr. Ashfield has in more than one example verified the accuracy of the venerable author of our most popular English herbal. *Lathræa squamaria* still grows "neere Harwood, in Lancashire, a mile from Whanley (Whalley), in a wood called Talbot Bank." The ancient name of the wood is lost, but the plant is still in being,—a testimony to the fidelity of one of our earliest botanists.

Mr. George Ward, whose name appears as a voucher for several rare plants in this list, has been botanizing in this district for upwards of forty years. His observations, reminiscences, memoranda, etc., about the botany of this part of Lancashire, would be worth reading.

His knowledge, like Mr. Jordan's, of Bewdley, must be full and precise. Like a man who has read but one book, or like a musician, who has learned to play only one instrument, or like an archer who has but "one string to his bow,"—he is able to handle his arguments, his instrument or weapon, more effectively than he who, like the smith, has more irons heating that he is able to strike ere some of them get cool.

BOTANICAL NOTES, NOTICES, AND QUERIES.

ANSWERS TO CORRESPONDENTS, NOTES, REMARKS, ETC.

To L. C. Miall the Editor is indebted for a new Flora of the West Riding, the Craven district, and the western tract lying to the south. A detailed notice of this valuable contribution to local botany will appear anon.

Mr. Cooke is thanked for his brief notice of the Society of Amateur Botanists. Our faith is great that something will be added to our knowledge of London botany by the young and ardent members of this Association.

Mr. Winter, of Bressingham, will receive a note from Chelsea, about his ALGA, brought hither by the Gulf Stream.

The Thirsk report, *desiderata*, etc., have been duly received, and are hereby acknowledged.

Our Arno's Grove correspondent will receive a missive on his return to Southgate.

The fair amateur botanists of the Chase, Enfield, have recently discovered a new locality for the Martagon Lily. Further particulars about the Middlesex station for this rarity are expected with considerable curiosity.

Mr. Watkins, of Ross, has sent some valuable remarks on the re-appearance of plants in coppice-woods, and their publication is postponed till this keen observer and our obliging correspondent has had an opportunity of making further observations.

We hope our good friend Mr. Galt will have received the MS. Mag. Nat. Hist. before he sees this notice. The volume was dispatched from Upper Manor Street on the 22nd ult. Many thanks are tendered for the perusal of this excellent miscellany.

S. B. is most respectfully informed that the Editor of the 'Phytologist' has a very distinct remembrance that the question—what is the "insane root which takes the reason prisoner"? was answered years ago, to the satisfaction of the inquirer. There is a difficulty about what species it is which bore the name of CULVERKEY in Walton's 'Angler.' Any clue to the solution of this difficult question will be highly appreciated, or, in pauper phraseology, "thankfully received."

The Editor has no difficulty in asserting that the little book "on a

great subject," kindly sent for notice by the promoters of the Wimbledon Naturalists' Club, will be welcomed by all who are stimulated to study and admire the works of the Almighty, and who are zealous in aiding any effort—however humble—to edify or amuse, or rather to elevate their fellow-men. To the amiable and zealous Treasurer of this most admirably organized and most successful institution, we, or rather our readers, are indebted for this treat. A detailed notice of the work appears, or will appear, in another part of this periodical.

Mr. Dyer, from whom we received these valuable and practical HINTS, has had the kindness to send *Anemone apennina* from the ancient Wimbledon station. He is hereby requested to receive our hearty thanks, both for the book and for the specimen. We wish we could say that the question about the wildness of this pretty plant was sufficiently answered.

It is hoped that room will be found for Mr. Ingle's list in next number.

Our notice of the ancient Roman Oats grown on an English farm was copied or extracted from a local newspaper sent to us by a very obliging correspondent who lives at Alnwick. We did not believe that these Roman oats had been lying *perdu* or dormant, or hybernating, for about seventeen or eighteen centuries, and then sprang up when the site of the old camp was cultivated. We will not answer for our correspondent's belief in this modern miracle of nature; but we may in excuse state that we are not held responsible either for the facts or the opinions of our correspondents. Several articles have appeared in our journal about the transmutation of species, and there may have been other alleged facts printed in our pages in which we had not the slightest confidence. There are still some believers in *Mummy Wheat*, or that Wheat buried in the Egyptian tombs when the ancient Hebrews were building the Pyramids, is now cultivated in Europe. The ingenious author of 'Proverbial Philosophy,' who was one of the originators of this belief, doubtless counts it a point of honour not to change his faith. We are obliged to any correspondent who will take the trouble of exposing these absurdities. We ourselves would not begrudge the labour, but we shrink from the odium.

NOTICE TO BOTANISTS.

In the current year will be published (?) what the learned author, François Crépin, names 'Revue de la Flore Belgique,' in large 8vo, on fine paper, and to consist of about 450 pages.

To this notice the following prospectus is appended:—"Since the year 1836, when appeared the third volume of 'Compendium Floræ Belgicæ,' by Dr. Lejeune, the only descriptive account we have of the plants of our native country, we have had no general work until 1860, when the author of the proposed Revue published his 'Manual of the Belgian Flora,' a work well known to the readers of the 'Phytologist,' and highly esteemed by all who are able to appreciate its merits.

"This work being purely elementary, does not give sufficiently ample details about the individual subjects of our flora.

"A quarter of a century has now passed since the appearance of the 'Compendium,' a work, indeed, of great merit, but now very incomplete,

and far behind the intelligence of the present day, and not in a condition to supply our modern wants. Science advances so rapidly in these times, that a scientific work requires revision, modification, alteration, and addition in a space of time less than the half of a quarter of a century. New materials have to be incorporated, and erroneous views and misrepresented facts have to be rectified or expunged.

"Besides, while France, Germany, England, Italy, Sweden, and Switzerland have recent Floras, we are still obliged to resort to the old treatises which were compiled when our knowledge of the subject was neither so comprehensive nor so complete as it is at the present day.

"The neighbouring kingdom of Holland has set an example to us (Belgians) in undertaking the publication of a Flora of the country, compiled from the 'Prodromus Floræ Batavæ,' 'Flora van Noord-Nederland,' etc.

"The learned Professor promises, in an introductory preface, to narrate the progress of Belgian botany from the middle of the last century to the present time; to enumerate and characterize the authors who have made the Floras of this kingdom their special study, and to show the influence which local explorers have had on the progress of the science.

"In the Systematic part of the work all the plants will be enumerated, with their synonyms, taken from general works, and from Belgian authorities. Every species will be accompanied with its census, distribution, and other phytogeographical details. Finally, a large portion of the species will be followed by critical remarks, complete descriptions, etc., and several critical species will form the subjects of extended monographs.

"The work will form a handsome volume, and the price to subscribers will be 6 francs. When published, the price to non-subscribers will be 8 francs.

"Intending subscribers should send their names and addresses to M. Mayolez, 35, Rue de l'Impératrice, Bruxelles."

The Editor of the 'Phytologist' wishes that the subscription-list may be as great as the merits of the learned author of the proposed publication.

To the Editor of the 'Phytologist.'

Sir,—I notice in 'Phytologist' for April, a description of "Roman Oats," which are said to have recently shown themselves on the farm of Mr. Binks, Pepper Moor, near Alnwick. We hope that Mr. Binks will substantiate his statements more completely, in order that they may obtain more implicit credit. I happen to have seen the oats exhibited at the Battersea Park Show, where they had a place at our stand, and were very generally inspected. The conclusion came to by every one was, that there was a very trifling distinction among all the so-called varieties, and that not one of them merited a new name. As for the globular heads, like onions, although much inquired about, they were not "within mortal ken." We wrote to Mr. Binks at the time we returned his specimens, but since then he has not vouchsafed to favour us with further manifestations, and I think that since the date of last letter as published by you, viz. 5th May, 1861, he ought to be able to authenticate his statements by the results of his trials of the oats during 1862, and to have sent you specimens of the seventy-five varieties from last year's crop.

WM. WARTER SMITH, for PETER LAWSON AND SON.

MOSSES OF FIFESHIRE.

Addenda to the Mosses of Fifeshire, collected, to the number of two hundred and twenty-one species and varieties, by Charles Howie:—

Gymnostomum rupestre, Schwaegr. Growing on the north side of the crag of Drumcarro, and on shaded walls, Mountmebrell Estate.

Encalypta rhabdocarpa, Schwaegr. Growing on Largo Links. Abundant.

Encalypta streptocarpa, Hedw. Growing on shaded walls, Mount Melvell, spread out in broad patches; growing in similar situations near Colinsburgh.

Tortula muralis, var. *δ rupestris*. Growing on rocks by the sea-beach, Pitmilly.

Bryum crudum, Schreb. Growing on the east side of Norman's Law, and on the north side of the crag, Drumcarro.

Mnium subglobosum, Br. and Sch. Growing in an old wood at Chesters, south of Kenly.

Lastrea polyantha, Hedw. Growing on trees in Claremont and Balcarris Den.

Hypnum nitens, Dill. Growing on marshy ground, Largo Links. Sparingly.

Hypnum sylvaticum, Dill. Growing under trees on a crag north of Fawfield.

Hypnum giganticum. Growing by the side of Kilconquhar Loch, associated with *H. cordifolia* and *H. cuspidatum*.

Largo, March, 1863.

CHANGE OF SEEDS.

(Feb. 11, 1863.) Several years ago one of the most useful and energetic of our correspondents inquired about a medium for getting seeds, especially of hardy, interesting, rare, or beautiful plants, suitable either for utilitarian or ornamental purposes. The writer of this notice is fortunately able to point out an easy channel for interchange of seeds, as well as of specimens, viz. her Most Gracious Majesty's Post-Office.

There is at present before me the list of seeds preserved in the gardens of the Royal Botanic Society of London, the *locale* of which is not far from some one of the stations of the metropolitan line of railway.

In this list there are several desirable things, viz.:—

Arenaria loricifolia. What is this,—a species or a variety? a British plant or an exotic? The interrogator should get seeds, then sow them, and ultimately he might know the plant, or at least might ascertain that it was something which he did not know.

Delphinium Staphysagria is an interesting plant to those who read the ancient botanical works of our own land and of foreign nations also.—*Staves acre*."

Dianthus cæsius, the Cheddar Pink.

Papaver nudicaule, once believed to be a native of England or of the British Isles, but a good plant, whether it grow in Argyleshire or in Labrador.

Veronica fruticulosa, a rather dubious plant. One of our correspondents once promised us this plant, but it has not yet made its appearance here, though it was discovered more than seven years ago. It is to be

feared that its modern discovery on Ben Cruachan will be like the rediscovery of *Ranunculus gramineus*, one of the few mare's-nests discovered or made current by the 'Phytologist,' or rather by its zealous contributors.

Mr. Lothian's Catalogue of Vegetable and Florists' Flower-seeds; also of tender, half-hardy, and hardy annual, biennial, and perennial seeds. A few are here entered from the latter class:—

Stachys coccinea, of which Mr. L. kindly sent us a little packet, but we did not succeed in raising one single plant. This is still a desideratum in our herbarium.

Epilobium latifolium is also a desideratum, for we do not know what it is, whether *E. montanum* or *E. hirsutum*.

Achillea Filipendula and *A. moschata* would be desirable additions to a collection either of dead or living plants.

Impatiens glandulifera is a magnificent plant, and it manifests some inclination to be one of our spontaneous productions at probably no very distant period. I have a kind of anticipation that the *Impatiens* on the banks of the Colne, well known to mine host of the 'Swan,' at Denham, near Uxbridge, is either the above species or *I. canadensis*, if there be any such species.

Mr. Lothian, in his catalogues, does not merely inform his customers and the public that his seeds are carefully selected; he does this, but this is not all. He gives good counsel about the way of sowing, and the proper time. Like the poet, who by the misfortunes of the "finch with golden wing and satin poll," warns his readers not to be rash,

"The lesson seems to carry,
Choose not alone a proper mate,
But proper time to marry."

Mr. L. tells us that we must watch the seasons, which are, in these our degenerate days, becoming so precarious that the authors of weather almanacks are at their wits' end. For example, during the last three months, viz. December, January, and February, we have had a vernal temperature; in April, May, and June, it is most piously to be wished that there be no more than the average number of bleak north-easters, cold days with showers of hail, snow, and sleet, and frosty nights.

There is no room for Messrs. Stansfield's lists; they are reserved for a more convenient season. Such of our readers as want to change seeds or specimens are now informed how these changes may be readily effected.

Communications have been received from

Mrs. Merrifield; J. S. M.; W. Galt; John Sim; Sidney Beisly; B. M. Watkins; T. W. B. Ingle; W. T. Dyer; M. A. Walker; Gorilla; Peter Lawson; J. Britten; W. Pamplin; F. Walker; M. C. Cooke; L. C. Miall; J. G. Baker.

BOOKS RECEIVED FOR REVIEW.

The MS. Magazine of the Glasgow Naturalists' Society, Vol. IV.

Hints on the Formation of Local Museums. By the Treasurer of the Wimbleton Museum Committee.

Flora of the West Riding of Yorkshire. By L. C. Miall and Dr. Carrington.

ERRATUM.—N.S. Vol. VI. p. 367, line 6, for "chuck," read chalk.

The Minute and the Beautiful in the Vegetable Kingdom.

By JOHN SIM, A.B.S.Ed.

Nature, or visible earthly things, have been by scientific men usually divided into three kingdoms, called respectively the Animal, Vegetable, and Mineral. The more highly developed forms of each are easily recognizable, and can with certainty be referred to their respective divisions; but when we approach the lower and more simple forms of organic life, there is a difficulty in deciding to which of the two kingdoms (the vegetable or the animal) they belong. In some cases this is not only difficult, but almost impossible. For example, no one can confound a cow with a cabbage, or an elephant with an oak; but who has yet determined with certainty, in the lower forms of organic existence, where animal life ends, and vegetable life begins? It is true, mistakes on this point may not be very numerous, but that they do occur is certain. Naturalists say an animal can easily be known from a plant, by the former possessing a stomach, and the power of locomotion. Though this in general is true, yet to this rule there are many exceptions. The Hydra is all stomach; and, like a plant, you may propagate it indefinitely, by cuttings or slips. Death to this creature, except by heat, seems a perfect farce. Diatoms and Desmids have not as yet with certainty been determined whether they are animal or vegetable, although the latter opinion seems to be generally adopted. The two kingdoms seem insensibly to merge into each other by means of these minute but beautiful organisms.

It is my intention in the present paper to call the attention of the readers of the 'Phytologist' to the attractive forms of the minute structures of vegetable life, too minute in many cases to be seen by the naked eye, but made cognizable to the sense of sight by means of microscopic power. To such as have not a microscope, the few hints here given will be of little interest or attraction; to those who possess that valuable instrument, I trust they will in some measure be appreciated, and prove acceptable.

Among the minute and beautiful objects in vegetable nature, I know of none which more deservedly claim our attention than the members of *Diatomaceæ*. Under a microscope of moderate power their structure and symmetry is truly astonishing; a

linear power of 150 diameters being sufficient to enable the observer to see the singular geometrical forms, and strange symmetrical marking. Yet others require instruments of the highest power and clearness, to define the transverse striæ on some species of *Pleurosigma*.

These wonderful plants (if such they really be) are far from rare or few; indeed, they are the most abundant of nature's "vital birth," for they may be collected in thousands in almost every muddy ditch and stagnant pool, as the application of the microscope will plainly verify. Some Desmids and Diatoms are very common, others very rare; among the common forms I know of none more so than *Diatoma vulgare* and *Navicula* (several species of). The *Arachnoidiscus* is a perfect beauty.

Among the Desmids, the genus *Euastrum* and *Clasterium* will amply repay examination. These, with others, can be easily obtained by putting the hand in amongst the water and slimy mud of any peaty ditch or stagnant pool.

But to rise a few steps higher, to objects whose place in nature is plain, I shall direct the reader's attention to the humble Mosses; their leaves and capsules, when observed with a power of fifty or sixty diameters, present objects of wonderful elegance and beauty. Just let the reader test by the microscope the following:—the capsule and peristome of an *Orthotrichum*, and the leaves of the following species,—*Mnium punctatum*, *M. affine*, *M. hornum*, *Hookeria lucens*, *Sphagnum obtusifolium*, *Splachnum vasculosum*, *Fissidens bryoides*, and several species of *Jungermannia*, such as *J. asplenoides*, *J. bidentata*, etc.,—and I am sure he will not be disappointed. The delicate reticulations of the leaves of these Mosses and *Jungermannia* is truly elegant.

"Oh, who that hath an eye to see,
A heart to feel, a tongue to bless,
Can ever undelighted be
With nature's perfect loveliness?"

The spores and spore-cases of Ferns are well worthy of the naturalist's attention. A moderate power of seventy or eighty diameters will, upon trial, be found to be mostly satisfactory, at least for the spore-cases, the markings on which are highly curious and beautiful. It is really astonishing to observe the same care and exquisite workmanship adopted by our great Creator on these minims of organic life as upon the huge Pachyderm of the

tropics or *Wellingtonia gigantea* of California; so "wonderful is our Creator in counsel, so excellent in working."

The spore-cases of the following Ferns are very handsome, and may be seen to advantage with a power of about sixty:—*Polystichum Lonchitis*, *Asplenium viride*, *Scolopendrium vulgare*, and the chaffy scales of *Ceterach officinarum*.

The pollen-grains of Phænogams, as well as the spores and spore-cases of Cryptogams, will, by examination, be found to possess exquisite symmetry and beauty. To the unassisted eye the contents of the anthers appear only as the fine "dust in the balance," or the atom that sports in the sunbeam. But when the powers of the microscope are brought to bear upon this seemingly impalpable powder, how different is the appearance! Instead of "fine dust," we perceive miniature bodies of diversified forms and singular beauty, characteristic of the genus of plants to which they respectively belong; each genus possessing pollen-grains in figure and size peculiar to itself and to itself alone.

These grains are of almost all conceivable forms, the spheroidal form, however, being more or less preserved. Indeed, it is very singular that the spherical form seems to prevail throughout organic nature. The constituent part of plants and animals is the cell, which usually partakes more or less of the character of a sphere; yea, the great globe itself, the sun, with his retinue of planetary worlds, are circular bodies.

The Great Creator has indelibly inscribed upon His works the emblem of His own eternity, in that He has made them circular orbs,—a circle, like Himself, having neither beginning nor end.

Such of the readers of this journal as possess a microscope will, by applying it to the pollen-grains of many of our garden and wild flowers, find that these minute bodies as truly show forth the power and wisdom of Jehovah as the lofty mountain or the boundless ocean. The pollen-grains of the genus *Malva* are large and spherical, and thickly beset "behind and before" with prickles; they may be seen perfectly with a linear power of sixty diameters.

Although in general the spherical form of pollen-grains prevails, still many singular and remarkable deviations occur in different genera. The Tulip has its pollen-grains, a perfectly-formed equal-angled spherical triangle. In the Lily they are like a parabolic spindle; in the Dandelion and Sowthistle the

surface-markings resemble the carving and cutting of a "cunning workman," so strongly are they carved and ornamented; in some species of Heath they are trilobate and triangular.

Among the flowering tribes, the forms and figures of their pollen-grains are so many, diversified, and beautiful, that to attempt an enumeration would only be trespassing upon the reader's time and patience. I would just say, take your microscope, sit down, and see for yourself. To those who have not that wonder-revealing instrument, endeavour to procure one; until you do so, you can never adequately conceive of the beauty and symmetry of structure, both in the animal and vegetable kingdoms. A compound microscope may now be bought for about three guineas, which will answer the botanist and naturalist very well for most of the purposes and investigations he requires to pursue. Such an instrument will magnify, with the different object-glasses, from thirty to about one hundred and fifty diameters, assuming the ordinary focal distance of the human eye to be ten inches. With such an instrument, the corpuscles of the blood and globules of milk may be seen, and the longitudinal striæ on the scales of *Lepisma saccharina* clearly defined.

The best and cheapest work on the microscope is by Jabez Hogg, published by Routledge, and costs six shillings; but a small book may be had for a shilling, entitled 'Common Objects of the Microscope,' by J. G. Wood, and published also by Routledge. Well may the scientific man exclaim, with the royal Psalmist, "O Lord, how manifold are thy works! in wisdom hast thou made them all."

JOHN SIM.

Bridge End, Perth, June, 1862.

Remarks on the European Range of the Indigenous British Plants.

The two lists of plants common to the Azorean Isles and to the empire of Japan, have long been in our hands, and they are now offered to our readers, with the intention of inviting their remarks on this important subject.

From Greece, a specimen of the common Primrose, *Primula vulgaris*, with which we were lately supplied by the kindness of one of our correspondents, who spent the spring and early sum-

mer of 1862 in studying the botany of that charming kingdom, reminded us of the Azorean and Japanese lists of plants, put aside some time ago.

There are many remarks in hand on the Greek plants, which we hope ere long to submit to the readers of the 'Phytologist;' and as soon as M. von Heldreich, the botanist *par excellence* of Greece, has had time to study them, and to give us the results of his investigations and comparisons, they will be printed in our pages, for the delectation and instruction of British botanists.

It is confidently anticipated that several of the species of this great collection brought home by our obliging correspondent, and liberally supplied to us, are of considerable commercial value; or, in other words, will increase the stocks of nurserymen and florists, and be objects of special interest to amateur cultivators.

One of the Crucifers has already been introduced, viz. a dwarf Alyssum, with hoary foliage, bright yellow flowers, of a dwarf, bushy, erect habit, quite hardy, for it is now blossoming (May 1st) in the open grounds of the Green Park, adjoining Piccadilly. The usual bedding-stuff, viz. the Verbenas, Calceolarias, Lobelias, Heliotropes, Geraniums, and such like half-hardy things, will not bear the cold nights of April and the beginning of May; they can rarely be transferred to the open ground before Midsummer.

These hardy early ornamental plants, which are semialpine in the south of Europe, will bear our coldest nights at this season, and afford something worth looking at weeks ere the tenderer plants can bear the open air.

The list of Azorean plants which follows is arranged systematically, and the number of species in each Order common to the Azoric and the British Isles is entered. Some of the species, it may be remarked, are only doubtful natives of Britain. Some few of them are recent introductions, or have been only recently observed or published as growing on British soil.

FLORA AZORICA.

Gramineæ (13).

Holcus mollis.	Poa loliacea.	Bromus madritensis
Anthoxanthum odoratum	Poa rigida.	Triticum repens.
Agrostis verticillata.	Briza minor.	Hordeum murinum.
Polypogon monspeliensis.	Cynosurus echinatus.	Lagurus ovatus.
Cynodon Dactylon.	Festuca bromoides.	

<i>Cyperaceæ</i> (8).		
Carex divulsa.	Isolepis fluitans.	Eleocharis multicaulis.
Carex stellulata.	Scirpus maritimus.	Cyperus longus.
Carex flava.	Eleocharis palustris.	
<i>Juncaceæ</i> (5).		
Juncus bufonius.	Juncus acutus.	Juncus uliginosus.
Juncus maritimus.	Juncus capitatus.	
<i>Naiadeæ</i> (2).		
Potamogeton natans.	Potamogeton pectinatus.	
<i>Lemnaceæ</i> (1).		
Lemna minor.		
<i>Coniferae</i> (1).		
Taxus baccata.		
<i>Callitrichineæ</i> (1).		
Callitriche verna.		
<i>Euphorbiaceæ</i> (2).		
Euphorbia Peplis.	Euphorbia Lathyris.	
<i>Urticaceæ</i> (1).		
Parietaria officinalis.		
<i>Chenopodeæ</i> (3).		
Chenopodium rubrum.	Chenopodium murale.	Salsola Kali.
<i>Polygoneæ</i> (2).		
Polygonum maritimum.	Polygonum Persicaria.	
<i>Daphnoideæ</i> (1).		
Daphne Laureola.		
<i>Plantagineæ</i> (5).		
Plantago Coronopus.	Plantago lanceolata.	Plantago major.
Plantago media.	Plantago Lagopus.	
<i>Compositæ</i> (9).		
Anthemis Cotula.	Filago germanica.	Cichorium Intybus.
Chrysanthemum segetum.	Filago gallica.	Hypochæris glabra.
Gnaphalium luteo-album.	Carduus tenuiflorus.	Sonchus oleraceus.
<i>Rubiaceæ</i> (5).		
Galium Mollugo.	Galium Aparine.	Sherardia arvensis.
Galium palustre.	Galium anglicum.	
<i>Gentianaceæ</i> (1).		
Erythraea latifolia.		
<i>Labiatae</i> (4).		
Mentha viridis.	Prunella vulgaris.	
Mentha rotundifolia.	Stachys arvensis.	

Verbenaceæ (1).

Verbena officinalis.

Asperifoliæ (3).

Echium violaceum.

Echium vulgare.

Myosotis versicolor.

Convolvulaceæ (3).

Convolvulus arvensis.

Convolvulus sepium.

Convolvulus Soldanella.

Solanaceæ (1).

Solanum nigrum.

Scrophularineæ (8).

Scrophularia Scorodonia.

Sibthorpia europæa.

Veronica Anagallis.

Linaria spuria.

Veronica arvensis.

Euphrasia officinalis.

Antirrhinum Orontium.

Veronica officinalis.

Primulaceæ (2).

Lysimachia nemorum.

Anagallis arvensis.

Ericaceæ (1).

Calluna vulgaris.

Umbelliferæ (2).

Helosciadium nodiflorum.

Fœniculum vulgare.

Araliaceæ (1).

Hedera Helix.

Crassulaceæ (1).

Tillæa muscosa.

Ranunculaceæ (4).

Ranunculus repens.

Aquilegia vulgaris.

Ranunculus parviflorus.

Delphinium Consolida.

Papaveraceæ (3).

Chelidonium majus.

Fumaria capreolata.

Fumaria officinalis.

Cruciferaæ (6).

Nasturtium officinale.

Sinapis nigra.

Senebiera pinnatifida.

Sisymbrium officinale.

Cakile maritima.

Viola odorata.

Caryophyllææ (3).

Sagina procumbens.

Alsine marina.

Silene inflata.

Malvaceæ (1).

Malva rotundifolia.

Hypericineæ (2).

Hypericum perforatum.

Hypericum humifusum.

Polygaleæ (1).

Polygala vulgaris.

Geraniaceæ (2).

Geranium dissectum.

Geranium robertianum.

Oxalideæ (1).*Oxalis corniculata*.*Lythrarieæ* (2).*Peplis Portula*.*Lythrum hyssopifolia*.*Rosaceæ* (6).*Rubus fruticosus*.*Potentilla Tormentilla*.*Agrimonia Eupatoria*.*Fragaria vesca*.*Potentilla reptans*.*Poterium Sanguisorba*.*Papilionaceæ* (11).*Sarothamnus scoparius*.*Trifolium suffocatum*.*Lotus angustissimus*.*Medicago Lupulina*.*Trifolium glomeratum*.*Lotus corniculatus*.*Melilotus parviflora*.*Trifolium repens*.*Lathyrus Aphaca*.*Trifolium scabrum*.*Trifolium procumbens*.

It is worth remarking that several of the plants in the foregoing list are such as are said to accompany man in all his migrations; or wherever the human family pitches his shanty, raises his hut, or builds his house and encloses his garden, some of the following plants spring up, viz. *Sonchus oleraceus*, *Galium Aparine*, *Malva rotundifolia*, *Solanum nigrum*; but *Poa annua*, *Alsine media*, and *Senecio vulgaris* do not appear in the Azorean list.

Primula vulgaris, a plant which, although a universal favourite, has no tendency to associate with mankind: it is as shy of his vicinity as the Orchids; and though its geographical range be very extensive, its migrations cannot be in any way traced to human agency. It is however found from the south to the north of Europe; at all events, it is both a Grecian and a British plant. Why may not the *Aremonia agrimonioides* and the *Aremonia balearica*, both plants belonging to the Mediterranean flora, and also found in Perthshire, be also natives of Britain?

That there are more species common to the British and the Japanese Islands than to the former and the Azorean, may be attributable to the greater extent of the empire of Japan, and also to the fact that it was probably elevated from Thetis' lap centuries, or possibly thousands of years, before the Azoric group emerged from the bottom of the Atlantic.

Note.—The species common to both the Azorean and the Japanese floras are printed in *italics*.

The following list is from Thunberg, compiled eighty years ago, and contains the plants common to Great Britain and Japan:—

List of Plants common to Britain and Japan.

<i>Callitriche verna</i>	<i>Humulus Lupulus.</i>	<i>Rosa canina.</i>
<i>Ligustrum vulgare.</i>	<i>Hydrocotyle vulgaris.</i>	<i>Rubus Idæus.</i>
<i>Veronica Anagallis.</i>	<i>Daucus Carota.</i>	<i>Rubus cæsius.</i>
<i>Veronica Chamædrys.</i>	<i>Anethum Fœniculum.</i>	<i>Fragaria sterilis.</i>
<i>Veronica arvensis.</i>	<i>Apium Petroselinum.</i>	<i>Potentilla verna.</i>
<i>Fraxinus excelsior.</i>	<i>Sambucus nigra.</i>	<i>Papaver Rhœas.</i>
<i>Lemna minor.</i>	<i>Alsine media.</i>	<i>Papaver somniferum.</i>
<i>Salix alba.</i>	<i>Tamarix gallica.</i>	<i>Tilia europæa.</i>
<i>Cypripedium Calceolus.</i>	<i>Statice Limonium.</i>	<i>Poterium Sanguisorba.</i>
<i>Valeriana officinalis.</i>	<i>Allium arenarium.</i>	<i>Pæonia officinalis.</i>
<i>Scirpus lacustris.</i>	<i>Scilla bifolia.</i>	<i>Aconitum Napellus.</i>
<i>Carex vulpina.</i>	<i>Asparagus officinalis.</i>	<i>Aquilegia vulgaris.</i>
<i>Carex remota.</i>	<i>Convallaria Polygonatum.</i>	<i>Zostera marina.</i>
<i>Carex cæspitosa.</i>	<i>Convallaria multiflora.</i>	<i>Thalictrum flavum.</i>
<i>Phalaris arundinacea.</i>	<i>Acorus Calamus.</i>	<i>Ranunculus auricomus.</i>
<i>Panicum verticillatum.</i>	<i>Juncus conglomeratus.</i>	<i>Sagittaria sagittifolia.</i>
<i>Alopecurus geniculatus.</i>	<i>Juncus effusus.</i>	<i>Caltha palustris.</i>
<i>Avena fatua.</i>	<i>Juncus pilosus.</i>	<i>Mentha Piperita.</i>
<i>Avena sativa.</i>	<i>Juncus campestris.</i>	<i>Lamium purpureum.</i>
<i>Arundo Phragmites.</i>	<i>Berberis vulgaris.</i>	<i>Lamium amplexicaule.</i>
<i>Lolium temulentum.</i>	<i>Rumex crispus.</i>	<i>Leonurus Cardiacæ.</i>
<i>Triticum sativum.</i>	<i>Corylus Avellana.</i>	<i>Clinopodium vulgare.</i>
<i>Triticum hybernium.</i>	<i>Polygonum Bistorta.</i>	<i>Melittis melissophyllum.</i>
<i>Amaranthus Blitum.</i>	<i>Polygonum aviculare.</i>	<i>Prunella vulgaris.</i>
<i>Galium uliginosum.</i>	<i>Polygonum Fagopyrum.</i>	<i>Melampyrum arvense.</i>
<i>Galium verum.</i>	<i>Polygonum Convolvulus.</i>	<i>Thlaspi arvense.</i>
<i>Plantago major.</i>	<i>Paris quadrifolia.</i>	<i>Thlaspi Bursa-pastoris.</i>
<i>Epimedium alpinum.</i>	<i>Chrysosplenium alternifolium.</i>	<i>Sisymbrium Nasturtium.</i>
<i>Cornus sanguinea.</i>		<i>Sisymbrium amphibium.</i>
<i>Viscum album.</i>	<i>Dianthus deltoides.</i>	<i>Turritis hirsuta.</i>
<i>Urtica dioica.</i>	<i>Dianthus Caryophyllus.</i>	<i>Brassica orientalis.</i>
<i>Betula Alba.</i>	<i>Arenaria serpyllifolia.</i>	<i>Brassica Rapa.</i>
<i>Betula alnus.</i>	<i>Sedum Telephium.</i>	<i>Raphanus sativum.</i>
<i>Buxus sempervirens.</i>	<i>Oxalis Acetosella.</i>	<i>Juniperis communis.</i>
<i>Sagina procumbens.</i>	<i>Oxalis corniculata.</i>	<i>Pinus sylvestris.</i>
<i>Lithospermum arvense.</i>	<i>Cerastium vulgatum.</i>	<i>Taxus baccata.</i>
<i>Anagallis arvensis.</i>	<i>Cerastium viscosum.</i>	<i>Fumaria officinalis.</i>
<i>Menyanthes nymphoides.</i>	<i>Ceratophyllum demersum.</i>	<i>Polygala vulgaris.</i>
<i>Convolvulus Soldanella.</i>	<i>Lythrum Salicaria.</i>	<i>Vicia sativa.</i>
<i>Polemonium cæruleum.</i>	<i>Agrimonia Eupatoria.</i>	<i>Ervum tetraspermum.</i>
<i>Campanula Trachelium.</i>	<i>Fagus Castanea.</i>	<i>Lotus corniculatus.</i>
<i>Datura Stramonium.</i>	<i>Euphorbia Peplus.</i>	<i>Medicago polymorpha.</i>
<i>Solanum nigrum.</i>	<i>Euphorbia Lathyris.</i>	<i>Sonchus oleraceus.</i>
<i>Lycium barbarum.</i>	<i>Euphorbia helioscopia.</i>	<i>Leontodon Taraxacum.</i>
<i>Euonymus europæus.</i>	<i>Euphorbia coralloides.</i>	<i>Cichorium Intybus.</i>
<i>Hedera Helix.</i>	<i>Prunus Cerasus.</i>	<i>Arctium Lappa.</i>
<i>Chenopodium album.</i>	<i>Prunus domestica.</i>	<i>Serratula tinctoria.</i>
<i>Chenopodium viride.</i>	<i>Prunus spinosa.</i>	<i>Carduus eriophorus.</i>
<i>Beta vulgaris.</i>	<i>Pyrus communis.</i>	<i>Carduus acaulis.</i>

Artemisia Abrotanum.	Viola hirta.	Equisetum hyemale.
Artemisia vulgaris.	Viola palustris.	Pteris aquilina.
Tussilago Petasites.	Viola odorata.	Asplenium Trichomanes.
Solidago Virga-aurea.	Viola tricolor.	Lycopodium clavatum.
Inula Helenium.	Equisetum arvense.	Cannabis sativa.

The following genera are common to Britain and Japan, but they include no British species, viz. :—

Acer.	Chrysanthemum.	Hordeum.	Enothera.	Saxifraga.
Agrostis.		Holcus.	Ophioglossum.	Scabiosa
Ajuga.	Clematis.	Hypericum.	Ophrys.	Scutellaria.
Alisma.	Cratægus.	Ilex.	Origanum.	Senecio.
Andromeda.	Cuscuta.	Impatiens.	Ornithogalum.	Silene.
Anemone.	Cynoglossum.	Iris.	Osmunda.	Sinapis.
Anthericum.	Cynosurus.	Lactuca.	Peucedanum.	Sison.
Aristolochia.	Daphne.	Lithospermum.	Picris.	Sium.
Arum.	Datura.	Lobelia.	Pimpinella.	Spartium.
Asarum.	Draba.	Lonicera.	Poa.	Spiræa.
Astragalus.	Elæagnus.	Lychnis.	Polypodium.	Stellaria.
Azalea.	Erigeron.	Lysimachia.	Prenanthes.	Swertia.
Bidens.	Euonymus.	Malva.	Quercus.	Teucrium.
Blechnum.	Festuca.	Millium.	Rhamnus.	Trifolium.
Bromus.	Gentiana.	Mespilus.	Ribes.	Valeriana.
Bryonia.	Geranium.	Myosotis.	Rubia.	Verbena.
Cardamine.	Geum.	Narcissus.	Sagina.	Viburnum.
Chara.	Gnaphalium.	Nepeta.	Salvia.	Vinca.
Cineraria.	Hedysarum.	Nymphæa.	Sanicula.	

A few Remarks on Native and Naturalized British Species.

By a Correspondent.

The popular opinion that all domestic animals and cultivated plants were originally reclaimed from the wild or natural state is neither founded on fact, nor even feasible as a theory. 'Natural' and 'wild' are not always synonymous terms; a production may be *natural* which is not *wild*. A few examples there have been, and are still, of domestic animals escaping from their state of domesticity, as plants cultivated extensively often escape, and sometimes establish themselves independently of man; but surely it is unphilosophical to infer from these few isolated and casual accidents that the races of animals and genera and species of such plants were originally wild. Domesticated animals exist only in a domesticated state, *i. e.* are dependent on man, and

ever have been in this condition. Cultivated plants are still more rarely found wild, and then only in the vicinity of places where they have been cultivated. Our cereal grasses, several of our leguminiferous plants, our vegetables, and probably some of our flowers, are examples of this.

Does any botanist seriously believe that our numerous varieties of wheat have all been produced from the wild species of *Triticum*? We know it is believed that the whole race of Cabbages—*drumheads*, *sugarloafs*, the ancient well-known *Batersea*, all sorts of Cabbage, red, white, and grey, Savoy, Scotch Kale, Broccoli, Brussels sprouts, Cauliflowers, etc.—have all descended from *Brassica oleracea*. *Credat Judæus Apella*. The Almighty, at the beginning, created *herbs yielding seed*, and *trees yielding fruit*, for meat to man, and gave them into his charge *to keep them and dress them*. Plants were created for delectation as well as for sustenance, and by the art and industry of man infinite varieties of these have been produced. Some of the ornamental species of which the native country has not yet been discovered may belong to this class, which may be said to be domesticated. Everybody who observes knows that there are certain plants possessing all but a cosmopolitan character. They accompany man in all his migrations; wherever he settles they find a home.

The Nettle, the Chickweed, the Shepherd's Purse, and the annual *Poa* (*Poa annua*) are familiar examples. The greater Celandine, the Vervain, the Borage, and the green Alkanet are less common instances, but exemplify this peculiarity. The Wallflower, the Snapdragon, our two mural Pinks—*Dianthus Caryophyllus* and *D. plumarius*,—may have this property, viz. a capability of self-dependence in the society of man. It may be assumed that the four last-named species, and we may add the Wall Toadflax (*Linaria Cymbalaria*), are natives of Europe, for this reason, that they grow spontaneously throughout the greater part of our continent. Why may they not, for the same reason, be natives of England, or of some part of it at least? We admit that England is in Europe, and moreover many believe that in bygone ages this island formed a part of the continent, and that the Strait of Dover was then an isthmus.

Even granting that plants have a centre of vegetation towards which they tend, or from which they diverge, and admitting further that they are most abundant in this their centre of distri-

bution, they will notwithstanding have a tendency to enlarge the circumference of their *locale*, to extend their horizontal and vertical range, and to embrace a larger space.

This tendency will increase with the increase or diminution of temperature; or with atmospheric changes attendant on cultivation; or it may, in certain cases, depend on the neglect of cultivation. In densely-peopled Europe, however, it is but seldom that the neglect of culture extends the range of plants; cultivation frequently does. We know that during the last three centuries this cause, the extension of tillage, has been very efficient in promoting the dispersion of plants. Our flora has increased, and is still increasing rapidly; this fact has often been held up to the notice of our readers.

The nativity of a plant is not to be ignored or denied simply on the ground that it is not found everywhere from the Lizard Point to Wick or John-o'-Groat's House. Botanists who only see a straggler, like *Senebiera didyma*, here and there about London and York, say it is not a native. Probably it is not, in their very restricted sense of the term. Yet those who see it about King's Wood, and other places near Bristol, have no hesitation in admitting its claims.

The Wallflower probably is not so common on walls in Scotland as it is in the neighbourhood of London and on the ancient castle of Guildford, but this is no sufficient reason for denying its nativity. Again, as this plant (Wallflower) is not known to grow anywhere but on such places as rocks and walls, where it grows here, and consequently there is the same objection to its admission as a native of anywhere, the *onus probandi* lies upon those who deny the nativity the plant, not on those who assert it.* It may be a native of several places, as of France and Germany, but why not that of England? The reason given for this denial is equally valid for denying its nativity in all other places, viz. its growing on walls, on artificial erections. If this principle were strictly carried out, at least one-half of the plants usually deemed British would be expunged from our national catalogues, and for what object? The maintenance of the purity of our flora.

* Our correspondent appears to have forgotten that the Wallflower grows plentifully on the sea-margin in that bleak part of the coast of England between the South Foreland and Dover Castle.—ED.

This is like the amiable weakness of some of our linguistic purists, who will admit no word as British unless legitimately derived from the languages of our Celtic and Saxon ancestors. Words are, however, far less permanent in their character and application than plants. The latter generally remain almost unchanged, both in their properties and their localities; all attempts to trace their history to very remote periods will be vain, and especially unsatisfactory will be all endeavours to trace them either to the original cradle of the human race, or to other countries more or less remote from the places where they are now found. There is no conceivable objection to the terms native and naturalized, spontaneous and cultivated, except this sole and important one,—the impossibility of employing them with certainty and satisfaction. It may be affirmed that a plant is of spontaneous growth, or that it is only cultivated in any particular locality; but who will affirm that a plant is native in the sense applied by botanists generally? The best evidence of this difficulty is, that botanists are not agreed on this point; or if there is any agreement, it is generally ascribable to indifference. Many affirm that because a plant is spontaneous and plentiful, and tolerably well established, that it is native.

There are two plants in Surrey with which we are well acquainted, and which have been spontaneously produced for many years. *Impatiens fulva* abounds on the Tillingbourne, below Albury; there is not one plant above the gardens of this park and mansion. It also abounds more or less on the banks of the Wey, only below the confluence of the Albury stream. The gardens of Albury are the cradle of this now well-established American plant, and the country whence and the means by which it was transported are not very doubtful. *Isatis tinctoria* is another plant which occupies but a small space, but abounds in examples. Its centre is one of the chalk quarries between Guildford and Shalford. This spreads over the adjoining fields, but only to a very short distance from the chalk-pit.

Some say the *Isatis* is a native. No one says that the *Impatiens fulva* is a native; it is well known to be an introduced species. *Mimulus luteus* has been naturalized in Surrey and in Yorkshire and in Scotland, and the plant was unknown in England, even as a garden plant, forty or fifty years ago. This is a case in which we may pronounce positively, for the plant has

only been known in this country for a very short period, consequently we may say it is naturalized. But when we include under this category *Vinca minor*, *Chelidonium majus*, *Cheiranthus Cheiri*, *Linaria Cymbalaria*, and many other equally common and well-established plants, what value is the term alien or naturalized? The plant against which it is placed may have been the spontaneous production of the country for a hundred years or a thousand years. Nay, we have no historical evidence of its introduction at any time; it may be native, or it may have been introduced before the Flood, for anything we can tell.

Great importance is very properly attributed to the terms *native* and *naturalized*; the latter (see 'Phytologist,' p. 450, as above) is defined to have "every appearance of a native, growing and reproducing itself regularly, without the assistance of man; proved to be acclimatized by having survived for a period of years, embracing all the varieties of temperature." To ascertain if a plant be *native*, a character obviously distinct from *naturalized*, De Candolle, in his 'Géographie Botanique,' employs three tests:—1st. The old Floras are examined to see if the species in question was entered in them as an undoubted native. 2nd. The names in popular use are to be compared, to see if it had a name in the older language of the country where it is now found; and 3rd, the botanical proofs derived from the nature of the habitat, whether in the vicinity of houses, cultivation, seaports, etc.; whether spreading like *Anacharis*, *Veronica Buxbaumii*, etc.

The chronology of introduced plants may be said to be of two kinds, historical and *prehistorical*. Phytogeographers define these two periods as the space intervening between the Roman dominion in these islands and the discovery of America, and that from the discovery of the New World to our own times.

The ancient portion is the period assigned for the introduction of the *Narcissi*, the *Ornithogalum*, the Wild Tulip, the Clove Pink, the Wallflower, St. Mary's Thistle, Soapwort, Yellow Fumitory, etc.

It may be inferred, from the examples of plants which have been naturalized in the British Isles within the last three hundred years, and also from such as have been well established *here* as spontaneous productions, that it is impossible to distinguish between such species as are to be accounted aboriginal

natives, and such as were introduced between the Roman dominion and the discovery of America.

The writers of the most ancient Floras were not so critical as the moderns are; and as the history, geography, and statistics of the vegetable kingdom were less perfect two centuries ago than they are at present, much stress cannot be safely laid upon their authority. Besides, it cannot be safely assumed that our older botanists observed all the plants that were existing in their days. Like the older language of nations, the ancient language of science was not very precise. Ancient British botanists did not distinguish one hundred and forty species of Grasses, and about ninety Sedges and other allied genera in the Order *Cyperaceæ*.

Botanists do not lay much stress on the ancient names as aids in establishing the nativity of species. It is a principle, like the prehistoric one, which solves no difficulty.

The third test, viz. the vicinity of houses, cultivation, sea-ports, cannot be available, because these are the only localities where most of these plants grow in all countries whatever. For example, Borage, Melilot, Anchusa, and several Crucifers are found in all countries to select such situations as they choose in England.

Spontaneous plants (not natives nor cultivated) are divided into four classes by the greatest living authority on this subject, viz.:—1st. Aliens not yet established. 2nd. Species perfectly naturalized, but their foreign origin known, and therefore unquestioned; take *Anacharis* and *Mimulus* for examples. 3rd. Perfectly naturalized, but their foreign origin only probable; *Aristolochia Clematitis* and *Narcissus biflorus* are examples. 4th. Plants perfectly naturalized, but their foreign origin slightly suspected; examples, *Narcissus Pseudo-Narcissus* and *Vinca minor*.

There is a distinction between No. 1 and Nos. 2, 3, and 4 of the above division, viz. between species imperfectly naturalized and those completely established or perfectly naturalized. Also there is a good line of demarcation between *Anacharis* and *Mimulus* on the one hand—both introduced within historical memory—and such plants as *Narcissus*, *Periwinkle*, etc., on the other. All these might be classified either as certainly naturalized and doubtful natives. But a question would still have to be answered, What is the distinction between native plants and doubtful natives,

or, as they say, between plants perfectly naturalized, but to which there is a shade of suspicion attached, viz. that at some time or other they migrated hither, or were introduced either by human or physical agencies, and such as have never been questioned?

BOTANY OF THE KINGDOM OF FIFE.

(Continued from page 327.)

On leaving the old burgh of Crail, misprinted Craig, page 325, we pursued our search for plants of local distribution. Among the cluster of projecting rocks from the shore, forming a turning-point west from Crail, we took notice of the *Artemisia maritima* matted among the rocky margin of the seashore. Passing westward towards the farmhouse of Caplie, the petrified forest so named attracted our attention; it being low water, we counted upwards of a dozen specimens projecting from the rocks, some of which rose several feet in perpendicular height; some had been recently broken and carried off. In all applications of the mind, of which natural science is no exception, we have examples representing how zeal outruns discretion. These plants appear to express the features of what was known as the genus *Sigillaria*, showing the cast of the inside of the stem, from which the bark had apparently fallen off. We also found here, as also in various places round the coast, detached pieces of *Stigmaria*. The markings, however, of the two supposed genera appear from specimens to show the one running into the other; the base of the tree *Sigillaria* showing the ruptures on the bark, as in the case of trees of our own period, and the top of the tree *Stigmaria* showing the smooth bark, with the marks of leaf-attachment also observed in the growth of trees during the present age, as combining from markings of the old and new bark to form one tree. Cultivation had changed with it the surface of vegetation, except *Equisetum Telmateja*, which still retains its possession. We passed up from the seashore to the grounds of Innergellie, where the *Senecio saracenicus* was growing fifty years ago in waste, marshy ground; since then the ground has been drained and planted. Among the plantations we found several strong-growing plants. With reference to *Centaurea Scabiosa*, page 325, it grows associated with *Scabiosa arvensis*, this latter species

showing the colours referred to. We may remark, *en passant*, that the *Centaurea* has been found there with white flowers, on Kingcraig Point, west of Elie; it grows in profusion, with reduced shades of colour to that of white. Seeds of pure white flowers, when sown, produced plants with white flowers, while several plants flowered in the dark colour.

Reviews.

Manuscript Magazine of the Glasgow Naturalists' Society.

This volume (the fourth), and the first for 1863, is, as usual, a goodly-sized book of 460 octavo pages. Its contents are varied, instructive, and pleasing.

There are in the present number about forty distinct articles on the general subject of natural history, geology, botany, and zoology. A very considerable portion of the magazine is devoted to the service of the floral deity; and for the gratification and information of her devotees, there are at least a dozen contributions, both in prose and verse, on the subject of botany.

IN MEMORIAM is a genuine offering of sympathy to Mr. Small, the late editor of the magazine, who, like "many a flower" in these days, was not "born to blush unseen, and waste its sweetness on the desert air." There is this consolation for us, the children of mortality, that though "in the morning we grow up as flowers, and in the evening are cut down and withered," still the memory of the amiable and worthy is embalmed in the recollections of friends and associates. It is not the mode in our prudish times to relate how our relatives died in the odour of sanctity, but a good name is better than precious ointment, than the most exquisite perfume.

EX AURELIA is another tribute of affection, a memorial to the same true naturalist; *requiescat in pace* is all that can be said about this last-named effusion. Poets alone can deal with poetical effusions, and our vocation and capabilities are of too humble an order to justify us in criticizing the divine gifts of poetry.

Such articles as a Tour to Apple Cross, a Flora of Cumbraë, Excursion Notes, are better suited to our simple tastes and lowly aspirations.

Many of our readers would have enjoyed the ascent of Tor Aichiltie, and the view from its summit, minus the Scotch mist, which drenched two stalwart Highlanders from head to foot, and from their outermost mackintosh or wrap-rascal to their innermost *surcoat*, provided they wear this comfortable vestment.

This hill of Ross, on the north side of the Cromarty Frith, yielded the following rare species:—*Ajuga pyramidalis*, with radical leaves; also one of the rarest of British rarities,—*Pinguicula alpina*,—*Linnæa borealis*, *Moneses grandiflora*, *Gnaphalium rectum*, *Allosorus crispus*, etc.

The frequent saturations to which the traveller is subject in these excursions, are no inconsiderable drawbacks to the enjoyment of Highland scenery and alpine vegetation.

“Contributions towards a Flora of Clydesdale, and Gleanings around Liverpool,” contain ample lists of the vegetation on the banks of the Clyde and the Mersey. The following rare plants are common to both the English and Scottish western shores, viz. *Cakile maritima*, *Sisymbrium Sophia*, *Brassica monensis*, *Crambe maritima*, *Vicia sylvatica*, *Lythrus sylvestris*, *Crepis paludosa*, *Doronicum Pardalianches*, *Inula Helenium*, *Achillea tomentosa*, *Campanula latifolia*, *Lobelia Dortmanna*, *Andromeda polifolia*, *Vinca minor*, *Gentiana campestris*, *M. rotundifolia*, *M. viridis*, *Osmunda regalis*.

The paper on the Clydesdale Flora has an ample introduction, and a very sensible *finale*, containing some practical remarks on the best plan of completing the list of native plants in this fertile region.

The species themselves are well localized, with some exceptions; the latter are doubtful natives (?).

The gleanings round Liverpool are made up of a number of species set down apparently without order, or, as it may be said, at hap-hazard. This paper has neither beginning nor end, as a rhetorician might say, and no localities are appended.

The list of rare plants in this paper of gleanings might be entered in a single line, and leave some room at the end. There are only three, viz. *Osmunda regalis*, *Campanula latifolia*, and *Cakile maritima*; *Iberis* is an interloper. The visitor to South Lancashire and the Wirral will have but a very imperfect notion of the productiveness of this district, from the Liverpool Gleanings, as gleaned by a contributor to the Glasgow Nat. Soc.

MS. Mag. All the plants in this meagre list might be collected on a fair afternoon about the end of August, when such late plants as *Bidens tripartita*, *Lycopus europæus*, *Aster Tri-polium*, and the like, are in flower.

The orthography of this short paper is the only originality about it, and this, like many other novelties, is "new, but not true." The following is a sample:—*Scripus* (pro) *Scirpus*, *Galium* (pro) *Galium*, *Lonceria* (pro) *Lonicera*, *Centaury Cyanus* (pro) *Centaurea Cyanus*, *Nuphar lueta* (pro) *N. lutea*, *Viola lueta*, *Lamium alba*, *Molina et Arcticum*, etc.

The Clydesdale list is a good foundation for a complete enumeration of the species and localities of this very productive tract.

There are two papers on the flora of Cumbraë, the first on the 46th, the second on the 230th page. Cumbraë, it may be stated, is an island in the Frith of Clyde (?), if our geographical ken does not betray us, of very moderate superficial extent, but, judging by its productions, of considerable altitude.

From this article it appears that a Flora of Cumbraë has been recently published, but far behind the state of natural history as now studied, and quite inadequate to the requirements of the age.

As a sample of the more recent discoveries in this island, the following are quoted, viz. *Erythræa littoralis*, *Hypericum Androsæum*, *Ligusticum scoticum*, *Habenaria viridis*, *Pinguicula lusitanica*, *Verbascum Thapsus*, *Hymenophyllum*, *Osmunda*, etc. Also some of the suspected species, viz. *Lavatera arborea*, *Valeriana pyrenaica*, *Tragopogon porrifolius*, *Hypericum dubium*.

A list of Cumbraëan plants concludes the paper, and in addition to those entered above, the following may be here presented as rarities:—*Brassica monensis*, *Sagina subulata*, *Cerastium tetrandrum*, *Geranium sanguineum*, *Cotyledon Umbilicus*, *Sedum anglicum*, *Carum verticillatum*, *Pyrola media*, *Erythræa linariæ-folia*, *Convolvulus Soldanella*, *Anagallis tenella*, *Habenaria viridis*, *Allium vineale*, *Schoenus nigricans*, *Carex extensa*, *Lastrea æmula*, *Asplenium mariæum*, etc.

In the published list of plants found in the Cumbraës there are the following doubtful species:—*Cardamine amara*, which may grow there; *Thlaspi arvense*, a plant which may grow anywhere in Great Britain; *Hypericum montanum*, a very problematical species so far north; *Geranium nodosum*, suspicious in all hitherto printed British localities; *Erodium maritimum*; this is a

catch anywhere, except on the west of Wales, etc.; *Trifolium ornithopodioides*. But what think you, courteous reader, of *Herniaria hirsuta* on the shore of the estuary of the Clyde? It is a rare find! *Sedum dasyphyllum* is not a very unlikely plant, and has been already registered as a flower of Scotland; *S. reflexum* is very problematical; *Petroselinum segetum*, another of the same kidney! *Galium spurium*, *Asperula cynanchica*, *Gnaphalium supinum*, *Senecio viscosus*, *Orchis ustulata*, *Iris fœtidissima*, *Alisma natans*, etc., are some discoveries which it would be satisfactory to have rediscovered, or to receive further authentication.

The other paper on the flora of Cumbraë is well worth reading; and we should like to visit this islet, in company with its author.

Finally, we have the pleasure of congratulating our Glasgow correspondents and friends on the success of their manuscript magazine, and we do thank them very cordially for their kindness in sending it to Chelsea. It is not a *bonâ fide* publication, and therefore cannot be perused by many of our readers; consequently, criticism of its contents would be unfair, and scarcely intelligible. But even if it were committed to the public, it would be our aim to judge it with leniency, to cherish it as an example of a genuine love of science among the industrious population of the western emporium, which appears to be as celebrated for science as for commerce and manufactorial pursuits.

If the manuscript magazine of the Glasgow society were fairly amenable to literary opinion, we should be inclined, like the poet, to "be to its merits rather kind, and to its faults be rather blind."

It is confidently believed that our Glasgow brethren are fully aware of our sincere desire for the prosperity of their society, and of our good feeling to the authors of these papers especially; otherwise we would not venture to offer them good advice.

Not a single word will appear here to intimate that less poetry and fewer flights of imagination would be agreeable to sober Southrons. These writers are young, and full of the natural energy of youth and mental vivacity. Long may they enjoy their exuberant, healthy excitement! They will pardon the old man who has practised the craft of criticism for above half a century,

when he gently remonstrates with them for introducing novel-
ties in orthography quite unsanctioned by any authority what-
ever.

A genuine Anglo-Saxon is a decided foe to innovations, even
when introduced on high authority ; but for these already noted
there are no precedents. They are pure *lapses*, but neither *lapsus*
linguæ nor *lapsus calami* ; they are examples of weakness or of
carelessness, which should not appear. The revised and re-revised
code of educational legislation has supplied a remedy for these
defects of orthography.

We need not inform the proprietors that their Midsummer
volume will be very acceptable ; but we may tell our readers
that such a mode of communicating ideas and facts is worth a
trial by those who have something to relate which they do not
think of sufficient interest to the general public, or who are
naturally sensitive to hostile remarks, and shrink even from fair
criticism. To all such, this novel mode of publishing their dis-
coveries, thoughts, feelings, etc., will be available.

The Flora of Wiltshire, etc. By THOMAS BRUGES FLOWER,
M.R.C.S., F.L.S., etc. No. 6.

This portion of the indigenous plants of Wilts. contains the
Orders ACERACEÆ, GERANIACEÆ, LINACEÆ, BALSAMINACEÆ, OX-
ALIDACEÆ, and RHAMNACEÆ, viz. all the native Wiltshire species
of these families.

The localities appear to be well worked out, and in all cases
authenticated by recent authorities.

At page 127 there is a long and interesting note on the na-
tional floral emblem of Ireland, viz. the Shamrock ; and as the
learned author quotes Mr. Bicheno's essay in proof that the pre-
sent *Oxalis Acetosella* was the ancient Shamrock of Ireland, it
is perhaps fair to conclude that Mr. Flower adopts Mr. Bicheno's
views. "Typical," our author writes, "of the delicacy and sus-
ceptibility" (*sic in exemplare*) (? susceptible) "temperament of
its inhabitants."

One of the arguments urged in behalf of the Wood Sorrel's
being the proper national emblem is, that the plant is "familiar
at that season when the people celebrate the national festival." It

may be in flower in early seasons on the 17th of March in Wiltshire, and in the south of England generally, but it is later in Ireland.

Besides, it is scarcely credible that the people, who know little about the modern distinctions between wild and domesticated plants, cared whether their emblematic flower or plant was wild or cultivated.

But is it a real or only an assumed fact that the Dutch or white Clover is not indigenous in Ireland, as it is usually, rather universally, admitted to be a native of Great Britain? We have several plants which are both wild and cultivated,—for example, the red and white Clover. Sainfoin grows in fields, and on banks by roadsides. Ribgrass grows wild, and it is sometimes sown for pasture and for being cut as green food. Some say that Carrots, Parsnips, Cabbages, and many other plants are both wild and tame. Why should white Clover be an exception? It may, however be observed that even admitting that the plant now adopted by the modern inhabitants of Ireland as their national badge was not introduced before the sixteenth century: let us just ask where is the proof that the custom of wearing Trefoil on the hat or button-hole of a true Hibernian was observed before that time. The plant, even if introduced, might have been then in time enough to afford this lively people a means of indulging their whim.

We should like to learn what authority there is that the Irish people, either ancient or modern, ever employed the Wood Sorrel as an article of food. The author who visited Ireland in the sixteenth century, and who relates the fact of the people's eating this herb called Shamrock, also states that their destitution was so great that they ate each other. When a famished nation is reduced to such extremities, the distinctions between the acid and the astringent are not very obvious; Cresses, Dock leaves, Sorrel, and mayhap Clover, are eagerly gathered and devoured to allay the pangs of hunger. The Wood Sorrel would be but a poor substitute for the valuable Potato, even if a sufficient quantity could be procured, which would be impossible, for the plant is not very common, and it yields the slightest possible herbage.

It is true that this plant is called Shamrock in the native language, but it is equally true that the *Trefoils*, *Buckbean*, and possibly other trifoliate plants, are called by the same name.

It is quite possible that Dutch or white Clover is not the right Hibernian national emblem, though both the poets and the people are content to use it till they know better, or can find a fitter badge. Can our learned botanists and antiquarians tell us which is the Scotch Thistle?

Guernsey, Sark, etc. A Handbook for Invalids, Geologists, Naturalists, Archæologists, and others. Guernsey: S. Barbet, Printer and Publisher.

This tract is issued by certain inhabitants of these islands, with the view of drawing some part of pleasure-seekers, vacation tourists, and other descriptions of travellers to these shores.

Though it be of very modest appearance, with no pretensions, and obtainable at small cost, yet the *specialities* of the islands are briefly and lucidly described by great authorities, who possess the inestimable advantage of adding several initials after their legal and courtesy titles, as handles to their names. We will not venture to specify these authors, but they are the authors of papers on Climatology, Geology, Antiquities, Conchology, Entomology, Botany, Piscatorianism, Zoophytes, Ornithology. The last two subjects are by a fair authoress, who is *rien du tout*, as the witty Frenchman said; not even a member of the Linnean Society.

We wish, for our readers' sakes and our own, that all such invitations as the present were prefaced by so clear directions about the best way of reaching the places whereunto their authors wish to allure the public whose purses are well filled or their pocket-books well lined with something more negotiable than drafts on the banks of elegance and fashion.

The author or authors give a choice of *routes*, viz. first, by London and South-Western Railway, and steam-packet from Southampton, three or four times a week; second, by Great Western, combined with packet service from Weymouth, three times a week; third, from London direct, by a steamer which sails once every ten days; fourth, there is a steamer every week from Newhaven.

On arriving at Guernsey, and having settled his several fares to boatmen, porters, etc., the tourist is told where he may lodge,

and five principal hotels are named and localized; three are in the High Street, one in the Esplanade, and another in Cornet Street. Those who desire a private residence are informed that unfurnished houses, the rents of which vary according to size, situation, and term of hiring, may be had at every price, from £15 to £100 per annum; cottages in the country being obtainable at from £10 to £15. When taken furnished, the rent, as a general rule, is about double; but in both cases the rent is all that is payable, there being no taxes of any kind. Lodgings, whether furnished or unfurnished, may be had in all parts of the town and environs. The prices, of course, vary according to circumstances, but they will be found much below those payable in England, and they are, generally, well furnished, clean, and comfortable.

The following extract from the botanical article will show the floral riches of these islands.

The Channel Islands have long been famed for their floriculture, and this quality is said to have elicited from the late Douglas Jerrold the remark, that "one day or other these islands must be put into pots and sent over to Covent Garden to be sold." The wit of this saying is too refined or too recondite for raising even a smile on the features of persons of but average intelligence, but it will be sufficient to exemplify a fact that even the dark sayings of the ingenious are quoted, even though barely intelligible. The following quotation shows that if the Channel Islands cannot be potted and sent to Covent Garden, they are well worth a visit. As the Arabian prophet said, "If the mountain will not come to Mahomet, Mahomet may or must go to the mountain."

"The size to which the ordinary flowering-shrubs attain in the Island gardens, and their exuberant luxuriance of bloom, are astonishing to those who have been accustomed to the more modest products of an English garden. To see a myrtle covering the side of a house; fuchsias fifteen to twenty feet high, and full of splendid bloom; magnolias as tall as the loftiest laurels; hydrangeas of enormous size [frequently producing blue flowers],—these are the common wonders of the Island gardens; but what will the inhabitants of even Devonshire think of the *Camellia japonica* growing and flowering in the open air all the winter through, with a luxuriance quite equal to anything that can be attained in a greenhouse in England?

"Two aloes in bloom (*Agave americana*) were from twenty-five to twenty-eight feet high, and the leaves are already over eight feet high.

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The *Pinus filifolia*; the Norfolk Island Pine (*Araucaria excelsa*), and the *Yucca aloifolia* of South America, were all in splendid order and fine development. The *Cheirostemon platanifolium* (or *platanoides*), the celebrated 'Hand-tree,'—so called from the resemblance which the disposition of the stamens of its bright red flowers bear to the human hand,—a fruit-bearing shrub from Mexico, was also noticed by the author. Among other curiosities here were some splendid plants of the *Gunnera scabra*, a noble plant from the Pacific, with leaves of extraordinary size and roughness, and the fruit or seed gathered together in a tremendous spike.

"In England, people drive miles to see a specimen of the Aloe in flower, and the vulgar error is very generally adopted that these plants flower only once in a hundred years. Our readers, of course, do not need to be reminded that the fact is that the Aloe flowers but once in its existence, and that after that grand effort of nature has been accomplished, the plant dies. In England, the crisis takes a long time to come about; but in the islands, it is effected so much more rapidly, that the sight of an aloe in bloom is by no means an uncommon one. I certainly saw from eight to ten during my walks about the island, and the height which the major part of these had attained was not under five-and-twenty feet.

"Cape bulbs luxuriate here. The gaudy varieties of Gladioli—the *Ixias*, *I. viridiflora*, and *crateroides* with many other splendid kinds, are raised in this island, as well as the beautiful species of *Tritonia* and *Sparaxis* of many shades of colour. Great numbers of these are exported annually, and are of some importance commercially.

"The New Zealand Flax (*Phormium tenax*) grows vigorously in some spots, producing flowers and ripening seeds. *Arundo Donax* (or 'Canni di Giardini' of the Italians) sometimes grows twelve feet high; Indian Shot (*Canna*) remain in the open ground many years. These plants, belonging to this great division of the vegetable kingdom, are so exotic in appearance as to cause the English visitor to think himself further distant from home.

"The Blue Gum-trees (*Eucalypti*) and Wattle-trees (*Mimosa*) of Australia become trees here, and are very striking.

"The Glory Pea (*Clianthus puniceus*), a splendid shrub from New Zealand, as well as the Veronicas from same country, grow luxuriantly here."

Finally, the author tempts the economical by the information that lodgings will cost only from twelve to thirty shillings per week, the price being dependent on style and situation. We beg leave to second this laudable effort to help tourists to disburse their spare cash in a rational way, and in a place where it is believed that they will get a *quid pro quo*, or a fair equivalent for their expenditure.

Botanists will be induced to visit these isles in the hope of increasing the attractiveness of their herbaria or collections. The following are a few of the novelties that may be expected; they are extracted from the list published in this little work, and contributed by one of our Guernsey correspondents. :—

Allium Ampeloprasum.	Frankenia lævis.	Oxalis corniculata.
Allium Babingtonii.	Gnaphalium luteo-album.	Polycarpon tetraphyllum.
Allium triquetrum.	Herniaria glabra.	Polygonum maritimum.
Arthrolobium ebracteatum.	Hypericum linariæfolium.	Polypogon littoralis.
Briza minor.	Isoetes Duriei.	Polypogon monspeliensis.
Bromus maximus.	Juncus capitatus.	Scilla autumnalis.
Bupleurum aristatum.	Knappia agrostidea.	Scrophularia Scorodonia.
Carex punctata.	Lagurus ovatus.	Sibthorpia europæa.
Cicendia Candollii.	Lavatera arborea.	Silene anglica, var. quinque-
Cicendia filiformis.	Leonurus cardiaca.	vulnera.
Coronopus didyma.	Lotus hispidus.	Silene conica.
Cynodon Dactylon.	Lythrum Hyssopifolium.	Spiranthes æstivalis.
Cynosurus echinatus.	Matthiola sinuata.	Tillæa muscosa.
Cyperus longus.	Ononis reclinata.	Trichonema Columnæ.
Daucus maritimus.	Orchis laxiflora.	Trifolium suffocatum.
Erodium moschatum.	Ophioglossum lusitanicum.	Vicia lutea, etc. etc.
Euphorbia Peplis.	Orobanche Hederæ.	

Hints for the Formation of Local Museums. By the Treasurer of the Wimbledon Museum Committee. London: Robert Hardwicke, 192, Piccadilly. 1863.

What parochial community would now be without a museum, when the annual expense to each individual proprietor or member would be only five shillings per annum?

The formation of associations for the study of natural history has been frequently advocated in our pages, and at last a method has been discovered which renders their failure all but impossible. The success of the Wimbledon Village Club of Naturalists has placed this matter beyond the possibility of doubt.

The objects of the Wimbledon Club of Naturalists are the study of natural history in all its branches; and these are promoted by lectures, readings, the collection and comparison of specimens, etc. etc. By these means the working classes are to be both instructed and amused. The *utile* and the *dulce* are so admirably blended, and all classes of the community are so cheaply and agreeably associated, that a healthy stimulus is

afforded to the more intelligent members, who educate themselves while they impart information to the younger and less informed members, who are thus roused and prepared to take an interest and an influential part in the great business of education.

The contents of this little but comprehensive volume present the readers with the objects of local museums, their furniture, their effects, results, etc. etc.

The treatise shows how the labour is to be apportioned, how the funds are to be raised, how the museum is to be started, what specimens are to be preserved, how they are to be mounted or prepared for future inspection, etc. etc.

On all these points the fullest information is embodied in the Treasurer's address, which is here presented to the readers of the 'Phytologist,' in the earnest hope that the energetic inhabitants of many of our smaller towns and villages will imitate this good example which the Wimbledon naturalists have carried out so successfully.

" ADDRESS.

"The Wimbledon Museum Committee wish it to be understood in the very outset of their undertaking, that their Museum is to be purely local; it is to consist solely of such objects of interest, characteristic of Wimbledon and its neighbourhood, as may be found within a radius of five miles from the parish church. . . . The Wimbledon Museum should contain specimens illustrating the nature of the soil, the tribes of living beings (plants and animals), and the antiquities, if any, of the neighbourhood; and in its formation it is hoped that all classes of the inhabitants will take a part. . . . If called upon to particularize objects whose collection, preservation, and careful examination, would be a source of never-failing interest to the inhabitants of Wimbledon—young and old,—the Museum Committee, speaking in very general terms, may point to the following list:—

"*Mineral Kingdom.*—Different kinds of sand, and of pebbles forming the gravel, and of fossils surrounding the pebbles, or within them. Varieties of peat and clay, to illustrate the nature of the surface earth.

"*Vegetable Kingdom.*—Confervæ, Lichens, Fungi, Mosses, Ferns. A collection of flowering plants, to show the leaf, flower, seed, and stem, arranged according to the natural system. Seeds of different plants, seed vessels, and their skeletons. Specimens of woods, also in section (transverse and longitudinal), and their bark. Several series, showing the stages of growth of a bud, from the period of its formation to that of its leaves, flower, seed, and bud again; series of leaves and their skeletons."

The author next sets before his readers several objects which may be called the appendages of a museum, viz. plans, sketches, photographs, drawings of magnified objects, registers of the flowering of plants, the leafing of trees, the first appearances of migratory animals, &c. etc.

His proposals for the formation of a museum are—

(1.) That the collection be limited to objects that are strictly local or existing within five miles of the church.

(2.) That all specimens must be well mounted, or otherwise so prepared as to be readily inspected by the members. These should have written or printed tickets, containing the name of the object, the place and time where and when it was collected, with any other needful information, and this account should be accompanied with the name and address of the collector.

(3.) That lists of plants and animals found in the museum area be drawn up, printed, and circulated.

(4.) That a series of meteorological observations be kept.

(5.) That books of reference be provided, and descriptive catalogues of the contents of the museum be compiled.

(6.) That a record of interesting facts in natural science be preserved for the use of the members.

The author next disposes of the objection "that the collection and custody of so many objects will be a burden on the willing-hearted members of the society." For example, see page 11.

"Why should not one person devote himself to the department of moths, or flies, or butterflies, or dragonflies, or bees, or wasps, or gnats, or beetles, or spiders, or ants, or snails, or worms, or to one class of fish, or reptiles, or birds, or mammalia, or to lichens, or fungi, or mosses, or ferns, or particular classes of flowers, or seeds, or woods, or barks, or fossils? The observation, collection, and preservation of any one of these classes of objects would give ample work to any individual, or indeed to two or three associated together, or even to a family; at the same time that the interest taken by each worker in other departments than his own would be increased rather than lessened.

"Again, some one person may be appointed to draw up a list of plants, another to receive information from villagers regarding the migration of birds, a third, the dates of the first and the latest appearance of annual flowers; a fourth, the total disappearance of plants or animals; a fifth, the habits of certain insects, fish, birds, or quadrupeds; while all would be aided in every way possible by the committee; and the specimens, if duly preserved, and the facts, if accurately recorded, would be of interest to the

inhabitants, not only of our own village, but to those of all villages, towns, and cities, in Great Britain; indeed to the inhabitants of all lands, where-soever the contemplation of God's works cheers and elevates the mind of man."

In conclusion we very warmly recommend these hints to our readers, many of whom desire to extend their acquaintance with natural science, and especially offer them as an excellent model to such benevolent persons as have the intention of doing something to provide innocent recreation, and healthy, useful instruction to the younger and less affluent members of society.

BOTANICAL NOTES, NOTICES, AND QUERIES.

ANSWERS TO CORRESPONDENTS, NOTES, REMARKS, ETC.

Mr. C. Howie, now of Largo, and late of St. Andrew's, obligingly informs us that he, with a deputation of the Archæological and Scientific Society of St. Andrew's, intends to explore the ancient camp of Sueno, the Danish monarch who invaded Scotland many centuries ago. Fifty years ago this place was a *muir* covered with whins, where *Hypnum undulatum* grew and fruited in profusion.

Our excellent correspondent is organizing a naturalists' society, and promises particulars in a future communication.

Our Plymouth correspondent, T. R. A. B., is hereby thanked for his remarks on *Epilobium lanceolatum*, and is requested to continue his observations, and to tell us the results. That his plant is *E. lanceolatum* we do not deny; all that we can say is that it corresponds with M. Crepin's description of what is so called by Belgian botanists, and it is like *E. montanum*, var. β , of Willdenow; but it does not correspond with Mr. Thwaites's Stapylton plant which was sent to us many years ago, and a specimen of the same has been recently sent by an obliging correspondent.

Mr. Winter is informed that a preserved or dried specimen of *Peucedanum palustre* is not wanted, but a living root. Any time between this and Midsummer will be time enough for its removal and replanting, viz. so that it may be well rooted in its new location before winter.

Our fair correspondent of Chace Cottage is hereby informed that the locality for *Lilium Martagon* is a very satisfactory one. As this species increases much by its creeping roots, and as the place where it grows is old pasture, there is no risk of its disappearance now that it has again reached the air and light, after its interment for so many ages as have passed since Enfield Chace was disforested. We hope to have the pleasure of visiting the locality, and also that of paying our respects to the fair inmates of Chace Cottage.

BOTANICAL NEWS.

The following is a brief Report of the Society of Amateur Botanists, 232, Euston Road :—

March 18th.—Paper on the Genus *Lycoperdon*, read by the President. Also an account of some of the most interesting plants found in the neighbourhood of Epping, by Mr. A. Grugeon.

April 1st.—Paper on the Order *Phalloidei* of British Fungi, by the President. Also "On the species of *Bovista* found in Great Britain."

April 3rd.—Excursion to Combe Wood (by permission), for the purpose of collecting Cryptogamic plants.

April 15th.—Paper on *Technokynesis*, or staminal motion in certain British plants, by the President. "Notes on British *Orchidaceæ*, by Mr. Savage.

EARLINESS OF THE SEASON, FINENESS OF THE WEATHER AND THE SPRING FLOWERS.

Not a tree, or shrub, or bush, or plant, or flower but seems instinct with life; an unprecedented precocity and forwardness are apparent in all of them, resulting from, and accelerated by the soft, mild weather. Honey-suckles and many Rose-trees have expanded their leaves; the Mezereon shows itself, "thick beset with blushing wreaths;" Lilacs and Syringas appear ready to burst into leaf; the Hawthorn is evolving and protruding its countless buds; and the Gooseberry even is mantling itself in green attire. The Snowdrop has been in flower an entire month; and, closely following it, in Flora's train, the several varieties of the Crocus—yellow, white, and blue, have made their appearance. Polyanthes, Primroses, Daisies, Wallflowers, the Hepatica, Arabis, and Dandelion may all be seen in bloom; while the Daffodil, or Lent Lily,

"Which comes before the swallow dares, and takes
The winds of March with beauty,"

will ere many days unfold its flowers, and deck the garden among other beauties. Not many days ago, the yellow Star of Bethlehem, which usually flowers about the 19th of March, and continues to blow through April, was discovered just coming into bloom in one of its old habitats in this neighbourhood by a botanical friend of ours. He is a keen observer, and was surprised at seeing this little plant so early. The weather yesterday was more favourable, and the day, for February, was very fine,—inviting birds to sing, and ladies who have nothing to do, or who ought to have something to do, to walk out and admire the loveliness of the vernal season.

Preston Chronicle, April, 1863.

EXCHANGE OF SPECIMENS.

Having good duplicates of several of the rarer Mosses (amongst them *Schistostega pennata*, recently collected), and being still in want of a large number of the more local species and varieties, and also of named specimens (well set and in good condition) of either British or foreign marine and freshwater Algæ, and foreign Lycopods,—having none of the latter, and but few of the former,—I shall be glad to forward lists to botanists wishing to exchange, and to receive their lists of desiderata.

Huddersfield.

T. W. B. INGLE.

RUBUS SAXATILIS IN MERIONETHSHIRE, NORTH WALES.

This bramble grows in the drier parts of the stony bed of the torrent Clettwr (ascending the stream), about three hundred yards above the bridge.

Pont Clettwr, Llanderfel.

SARRACENIA PURPUREA, A CURE FOR THE SMALLPOX.

On the efficacy of the above as a remedial agent in this loathsome disease, there is the following, copied from the 'Edinburgh Weekly Review,' of December 13, 1862:—

"During the season of 1861, the province of Nova Scotia was visited by a severe attack of smallpox; and as the disease was unusually malignant and fatal, defying all the ordinary remedial agents, Dr. Morris was induced, at the earnest solicitations of his friend Mr. Sang, who had elicited the secret from a Mic-Mac squaw, to try the remedy; and, to his delight, found the plant possessed of the specific virtue ascribed to it by the Indian."

This was communicated to the Review by Samuel H. Nibbs, 12, Rankeillor Street, Edinburgh.

VALERIANA OFFICINALIS, AND V. SAMBUCIFOLIA.

The earliest notice of these two forms or species of Valerian that I have seen, is in Lobel's 'Adversaria,' 319, ed. 1576, and 'Observationes,' 411, same date, where both are figured. *V. sylvestris minor* is the common form, which grows about London, and *V. sylvestris major* is the form which I have seen both in Wales and in Scotland.

Clusius' figures on page lv. Hist. Plantarum, appear as if they had been taken from the same blocks used in printing those of Lobel.

Parkinson, 123, and Gerard, 1075, are, as usual, faithful copiers of their great predecessors; in their impressions of these two plants are as faultless as photographs.

DEADLY NIGHTSHADE.

"The insane root that takes the reason prisoner."—MACBETH.

You have already given some notes in the 'Phytologist' on this subject, but I am not certain whether the *insane root of Shakespeare* has been identified. I find, in a work by John Thomson, called 'Etymon of English Words,' the following:—

"*Dwale*, a noxious plant, a species of *Solanum*; G. *duala*, T. *toll*, B. *doll*, Swed. and D. *dwalä*, delirium, folly, insanity, swooning, trance, all which effects are produced by Deadly Nightshade, which was formerly used in witchcraft.

"*Dwaule*, v. a., to rave, to be delirious, to talk idly."

CULVERKEYS. The same work gives the following:—

"*Culverkeys*, the flower Columbine.

"*Culver*, a wood-pigeon; S. *culfre*, from L. *columba*.

"*Keys*, flowers or fruit, such as the Cowslip, or Ash-pods, which hang like bunches of keys."

Could not some of your correspondents inform us whether they have ever heard the Columbine called Culverkey by the common people?

S. BEISLY.

PAPAVER CAMBRICUS. (*Welsh Poppy*.)

"Nascitur autem et observata primum fuit in Cambria septentrionali, locis umbrosis et lapidosis circa rivos alpinos, v. gr. Parkinsono primum memorante, versus Abbar media via inter Denbigam et Guidar, item prope pontem, Devæ fluvio superstructum, prope Balam, et ascendendo montem versus Bangorium. Sed nullibi frequentius provenit, quam circa Perisuum ad radices montium Widva et Glyder, circa rivum qui inde in lacus decurrit, observante Lloydio, dein Rajo et nobis etiam. Postea idem Lloydius vidit in monte 'Vann uwch deni' prope Brechiniam in Cambria australi. Sed nec ipsi Angliæ hanc plantam deesse constitit mihi, anno 1726, dum rupes Chedderenses plantarum gratia perlustrarem, in cujus cautibus eam cum Tunica rupestri (*Dianthus cæsius*), folio cæσιο molli observavi; quæ rupes inter oppida Chedder et Axbridge, in Somersetiensi comitatu, sitæ sunt."—Dill. Hort. Elth. p. 301, f. 290.

We do not remember any notice of the Bala locality of *Meconopsis cambrica*, but we know that in 1852 it grew plentifully on the old stone walls and on the cottage roofs of a little hamlet beyond Stainforth, near Settle, a few humble tenements on the road from the last-mentioned place to Penygvent. Our observant Preston correspondent, who has frequently botanized this district, has not, so far as known to the writer of this note, observed, or has not recorded this locality.

In the above year it was seen at Stackhouse, but only as a straggler. Also between Stackhouse and Stainforth Foss, a couple of plants of garden *Angelica* were found growing on the thick dry turf by the roadside.

HAREBELL, BLUEBELL.

"The wild Hyacinth; *S. hæur*; Scot. *haw*, blue, and bell. The Gothic tribe, called Heruli, are known to have affected a blue colour."

It appears from the above, taken from Thomson's Etymon, that this flower does not take its name from *hare*, the animal, but from the Saxon word signifying blue. It may be the same with regard to the Campanula, *hair* or *hare* bell, a very different flower, but having a blue colour, and probably better entitled to the name *bell* than the Hyacinth. What are the Blue-bells of Scotland?

S. BEISLY.

CONVOLVULUS SEPIUM.

The pink-flowered state of *Convolvulus sepium* has been noticed for many years in hedges about Hurstpierpoint, Sussex, growing with the ordinary white-flowered state.

WILLIAM BRITTEN.

Communications have been received from

C. Howie; T. R. A. Briggs; John Peers; W. Winter; M. A. Walker; J. W. Chapman; John Sim; J. Britten; F. Crepin; W. Pamplin; W. T. Dyer; C. J. Ashfield; H. C.; J. S. M.

BOOKS RECEIVED FOR REVIEW.

Supplement to the Warrington Guardian, April 15th.

The Preston Chronicle, May 16th, L'Ardenne; by F. Crepin.

ON THE BOTANY OF MALHAM.

The little village of Malham, in Yorkshire, has long attracted visitors by the wonders of its natural scenery and the rare interest of its flora. Ray, Willisel, Curtis, Dillenius, and Richardson are only a few of the older botanists who have left accounts of their discoveries at Gordale and the neighbourhood. For nearly two centuries the limestone rocks of that strange locality have been explored by an almost uninterrupted succession of British naturalists, nor have their pains been ill bestowed. There are few parts of England where the number of rare plants bears anything like the proportion to the extent of ground which those of Malham bear to its comparatively limited botanical area, and our knowledge of its botany may be said to be almost co-extensive with the number of species itself. Indeed, Britain on the whole is a well-examined country. Its botany is in a forward state of development, and few well-educated Englishmen are unacquainted with its chief centres of natural beauty. Whatever may have been said in the past respecting the folly of posting over the Continent and leaving our native land unexamined, we are not now prone to *that* fault. There is no necessity in the England of 1863 for an oration "*de necessitate peregrinationum intra patriam.*"

Malham is situated at the head of Airedale. The river which gives its name to that valley rises at the southern end of Malham Tarn. After flowing about half a mile, it sinks, reappearing at the foot of the Cove, a distance of more than a mile. Another stream, equal in volume, rises from the heights and "clowders" north-east of the tarn, rushes through the precipitous cleft of Gordale, and under the name of Gordale Beck joins the other rivulet between the villages of Malham and Kirby Malham. A third tributary flows from Kirby Fell and Scosthrop Moor, uniting itself to the Aire about a mile below the fork.

The general aspect of this remarkable spot may be roughly indicated by the resemblance it bears to a staircase of grey limestone cliffs, alternating with grassy slopes, reaching nearly 2000 feet at various points along its upper ridge, and descending to 650 feet above the sea-level in the valley below. The last irregular descent forms an arc of a circle, which, if completed, would have a radius of some five miles. In this arc of about 30°

the Cove and Gordale Scar find their place. The tarn is high up on the broad terrace between the top of the Cove and the second great ridge, 1200 feet above the level of the sea. The village of Malham lies about a mile from the foot of the Cove, at a height of rather more than 600 feet.*

It will be readily seen that such a piling-up of rocks as this is far from usual. The geological phenomena by which the scenery may be interpreted are no less extraordinary. To enter upon this interesting subject here is impossible, and it must suffice to say that Malham is situated on the edge of the Great Craven Fault, to which disturbance it owes the huge and precipitous limestone scars which now form its most characteristic feature. At the Cove the mountain limestone forms a compact band about 400 feet thick, with numerous vertical fissures. The valley of the Aire below the Cove is occupied by Yoredale rocks, consisting of alternating layers of limestone and millstone grit, with ironstone and coal in smaller quantities. The subject may be pursued further with the aid of Professor Phillips's 'Illustrations of the Geology of Yorkshire,' or his cheaper and more popular work on the 'Rivers, Mountains, and Sea-coasts of Yorkshire.'

The following *Florula* of Malham (to use a convenient though barbarous term) has been drawn up from personal observations extending over several years, various MS. lists, and one or two printed catalogues. An excellent series of papers by Dr. Windsor ('Phytologist,' N.S. vol. i.), which contains a large number of Craven stations for the rarer plants, has been consulted throughout. I have been able to verify most of his Malham localities. In all cases where I have found the plants *in situ*, the mark (!) is added. The very common species are omitted.

Plants observed in the neighbourhood of Malham, Yorkshire.

RANUNCULACEÆ.

Thalictrum minus, L. The normal form is littoral. *T. calcareum*, Jord.
Grows near the top of Gordale!

T. flexuosum, Reich. ? (*T. eminens*, Jord. ?) Gordale! In some lists this is styled *T. majus*. The *T. majus* of Dr. Windsor's list (N.S. i. 263) is the same as the Gordale plant.

Trollius europæus, L. Pastures above and below the Cove!

* The poet Gray has left an admirable description of Gordale among his letters. (See his Correspondence with Wharton, Oct. 18th, 1769.)

Helleborus fœtidus, L. I have a specimen which is said to have been "gathered below Malham Cove, 1839." No botanist of my acquaintance professes to have seen the plant *in situ*.

Actæa spicata, L. Gordale! Top of Malham Cove! "A few plants at the side of the brook below Malham Cove," *Dr. Windsor*.

CRUCIFERÆ.

Thlaspi alpestre, L. Malham Cove, *J. Tatham*. Near Malham Tarn! "Very plentiful by the lead-mines betwixt Stockdale and Malham," *Dr. Windsor*. The Malham plant is *T. occitanum*, Jord. Probably all of *Dr. Windsor*'s stations for *T. alpestre* belong to this species. Has he not mistaken *T. occitanum* for *T. virens* in the note to *T. alpestre* (p. 350)? The last-mentioned variety has not been found in Craven. Jordan, and not Babington, is responsible for the division of *T. alpestre*.

Hutchinsia petræa, Br. "On the higher part of the furthest east cliff in Awes Scar, near Malham Tarn," *Dr. Windsor*. I have found this plant at the height of 450 yards.

Cochlearia officinalis, L. (Var. *alpina*, Bab. *C. groenlandica*, Sm., not Linn.) Kirby Fell! Hawkswick Clowder?

Draba incana, L. Gordale! Hawkswick Clowder! Kirby Fell!

D. muralis, L. Walls in the village of Malham, *J. Nowell*. Rocks near the foot of Malham Cove! Gordale! Under Malham Cove, *Dr. Windsor*.

D. verna, L. A specimen in herbarium, named *D. inflata*, Hook., but difficult to identify in the dried state.

Arabis hirsuta, Br. Frequent on the limestone. Several unimportant varieties occur.

CISTACEÆ.

Helianthemum vulgare, Gært. Gordale! Malham Cove!

H. canum, Dun. Malham Cove! This plant, subdivided by Linnæus into *Cistus marifolius*, *anglicus*, etc., is by others regarded as merely a dwarf form of *H. vulgare*. This would be difficult to prove. I have seen the two plants growing side by side under precisely similar conditions, nor has any intermediate form been observed. The following diagnosis was made upon fresh specimens. (August, 1859.)

HELIANTHEMUM CANUM, *Dun*.

H. VULGARE, *Gært*.

Root—Long, woody.

Stem—Decumbent, shrubby, covered with numerous minute scars.

Leaves—Without stipules, ovate, opposite, flat, hoary beneath, hairy above.

Stem—Procumbent, shrubby.

Leaves—With stipules, ovate, opposite, flattish, hoary beneath, thinly covered with adpressed hairs above, margin slightly reflexed.

Racemes—Terminal, bracteate.

Sepals—Hoary, veins indistinct.

Petals—Æstivation rugose. Variable, but not so much so as *H. vulgare*.

Anthers—Subrotundate, notched.

Style—Flexuose, twisted sharply at the base, reflexed, "inflexed at the apex, longer than the stigma."

Seeds—Numerous, fuscous.

Vertical range—West Yorkshire, 150–600 nearly. North Yorkshire (J. G. Baker), 600. North of England, (Cybele Brit. iv. 337), Lake Province, 200; Yorkshire, 600.

Racemes—Bracteate.

Flower-stalks—Leafed to the top.

Sepals—Hoary only along the veins, intervening portions glabrous.

Petals—Æstivation rugose. Varying widely in size and form.

Anthers—Pyrulate, rugose.

Style—"Longer than the germen, bent at the base."

Seeds—Numerous, black.

Vertical range—West Yorkshire, 50–650. North Yorkshire (J. G. Baker), 0–700. North England (Cybele Brit.), Lake Province, 360; Yorkshire, 600.

VIOLACEÆ.

Viola hirta, L. Malham Cove! Gordale!

V. lutea, Huds. Above and below the Cove! What appears to be the same as Mr. Baker's var. *hamulata* ('North Yorkshire,' p. 207) in Gordale!

CARYOPHYLLACEÆ.

Arenaria verna, L. "By the calamine or lead mines between Settle and Malham, abundantly," *Dr. Windsor*. Rises to 650 yards or thereabouts on Hawkswick Clowder! Is *Dr. Windsor* sure that *A. Gerardi* grows in a "field between Stackhouse-Borrins and Feizor"? *A. laricifolia*, With., is not more likely, though it is said to be "localized by the Yore side at Hutton Conyers."

Stellaria glauca, With. Bogs near Malham Tarn, *Dr. Carrington*.

HYPERICACEÆ.

Hypericum montanum, L. Malham Cove! Gordale!

GERANIACEÆ.

Geranium sylvaticum, L. Malham Cove!

G. columbinum, L. At the foot of Malham Cove, *Dr. Windsor*!

G. sanguineum, L. Malham Cove! Gordale!

LEGUMINIFERÆ.

Hippocrepis comosa, L. Rocks above Malham Tarn, *Dr. Windsor*. Malham Cove!

ROSACEÆ.

Potentilla verna, L. Malham Tarn, *J. Tatham*. Gordale.

P. alpestris, Hall. Gordale! near Malham Tarn! between Grisedales and Malham Tarn?, *Dr. Windsor*.

Rubus saxatilis, L. Dry Banks, Gordale, *J. Nowell*. On the moor above Gordale!

R. plicatus, W. and N. Malham Cove! I believe that the *R. suberectus*

And., said to have been found at Malham, must be referred to *R. plicatus*.

R. discolor, W. and N. Frequent in hedges near Malham and Kirby Malham, but not ascending the higher scars.

Pyrus Aria, Sm. Malham Cove, *J. Tatham and others*!

ONAGRACEÆ.

Circæa intermedia, Angl. Malham Cove, *Dr. Windsor*.

GROSSULARIACEÆ.

Ribes rubrum, L. Above Gordale, *J. Nowell*. This apparently belongs to the following.

b. petræum, Sm. Gordale! "Crevices of rock betwixt Gordale and Malham Tarn. Also above Malham Tarn, and on the banks of the rivulet above Gordale," *Dr. Windsor*.

R. alpinum, L. Gordale! "Found between Gordale and Malham Tarn, with *R. petræum*," *Dr. Windsor*.

CRASSULACEÆ.

Sedum villosum, L. Malham Cove!

S. sexangulare, L. "In 1801 I found specimens of what I considered to be this plant, on the left-hand just below Malham Tarn," *Dr. Windsor*. Roof of a small shed near Kirby Malham! Undoubtedly alien or sub-spontaneous in both places.

SAXIFRAGACEÆ.

Saxifraga oppositifolia, L. Rocks on Malham Moor!

S. granulata, L. Near the top of Gordale! "Under walls on the road to Malham," *Dr. Windsor*.

S. hypnoides, L. Mr. Tatham refers the plant found near Malham Tarn to *S. platypetala*, Sm., which I have seen between Malham and Kilnsey.

Parnassia palustris, L. Malham Moor! "Very common in bogs and wet meadows," *Curtis*.

RUBIACEÆ.

Galium sylvestre, Poll. (*G. pusillum*, L.) Above Gordale! Malham Tarn!

G. boreale, L. Malham Tarn! Aire below Kirby Malham!

COMPOSITÆ.

Hieracium pallidum, Fries. In the Dillenian herbarium at Oxford, this plant and *H. anglicum* are preserved on one sheet, and labelled "Hieracium glaucum, pilosum, foliis parum dentatis. In loco declivi Gordil, prope Malham Cravoniæ vicum."

H. Gibsoni, Back. Gordale! Hawswick Clowder!

H. murorum, L. Gordale! Malham Tarn!

SKETCHES IN DENBIGHSHIRE.

A Ramble round the "Barber," May 9, 1863.

The place fixed upon as our starting-point was "Plas Newydd," a spot regarded with much veneration by the natives of Llangollen for having been the chosen residence of "Lady Eleanor Butler and Miss Sarah Ponsonby," two Irish ladies, who, for some romantic reason only known to themselves, chose to abandon their native country, lead a life of seclusion, and adopt an unfeminine and eccentric style of costume. Their portraits are to be seen in almost every house in Llangollen, while they now sleep beneath a monument in the burying-ground of the old parish church. Whatever hidden reasons they had for their oddities, their Welsh residence is at least interesting from the quantity of ancient oak-carving with which they had the good taste to adorn it. The gardens and pleasure-grounds, though of late years much neglected, show traces of former beauty; and then, having crossed a running stream, we find "a wishing well," the water of which falls drop by drop into an ancient baptismal font, which must have belonged to some sacred edifice, probably that little church whose ruins now form a portion of the farm-buildings at "Pengwern Hall." Around the "wishing well" Ferns have found a home, especially the *Scolopendrium vulgare*, which thrives luxuriantly in its smaller and larger varieties.

So much for the Plas. Our party being bent on a ramble, did not linger many moments within its gates, but, turning from thence, passed into a narrow lane leading behind "Bache Issa" and "Pen-y-bryn Hall. Later in the season the old hedgebank on the left-hand side will present a waving mass of foliage, as the graceful *Filix-fœmina* and tall *Filix-mas* mingle amicably one with another. Here the road diverges into two paths, one forming a long and gentle ascent to the "Geriant," or "Barber's Hill," and the other leading to a mountain gorge, the scenery about which is very romantic and beautiful. We chose the latter path, and were soon rewarded by finding several fine plants of the *Lastrea cristata*. The green edges of a wood close by were gay with numerous wild-flowers, among which we noticed the rich yellow blossoms of the *Caltha palustris*, just now in the zenith of its beauty. Skirting the wood, we soon found ourselves in the gorge, and there the

party scattered, some to ramble about the "Barber," and others to climb the steep black rocks which overhang the Berwyn side of the wide ravine. Feet adorned with "the best French kid" would find themselves in difficulties on that steep hillside, for the sharp loose stones are very insecure ground, often giving way at the slightest touch, and carrying the climber as many steps backward as forward. But we were not sorry to pause now and then, for said loose stones are in many places covered with patches of the *Polypodium Dryopteris*, which just now have a peculiarly pretty effect, the exquisite green of their delicate fronds showing in bright contrast to the golden stipes of (we think) the *Lastrea paleacea*, clusters of which dot the hillside in all directions. Stopping at an oasis among the stones, we managed to unbuild the roots of the *Dryopteris*, and so obtained a few specimens for home cultivation. Climbing the Berwyn rocks is rather hard work, but not so bad now as it will be a month or two hence, when the briery paths become invisible beneath the strong and spreading fronds of the Bracken. As it was, we fought our way through all difficulties, minutely examining every chink and crevice that could possibly contain a Fern. We had been told that we should find the *Allosorus crispus*, but though a very probable locality for that little Fern to choose, we could see nothing like it; so we contented ourselves by filling our cases with the *As. Trichomanes*, *Cystopteris fragilis*, and *Polypodium Phegopteris*, all of which we found in great plenty. The *Polystichum aculeatum*, too, almost covers a wide ledge just below the highest rocky ridge, showing, by the great length and breadth of its feathery fronds, that it is very content in its elevated quarters. Dark-green patches of the *Polypodium vulgare*, of a stunted though fertile growth, here and there met our view; and nearing the moorland above, we noticed the *Blechnum boreale* growing very luxuriantly among the gorse and heather in the peaty soil it loves so well. While carefully scrambling upwards, a rather amusing incident occurred. One of our party, who was closely investigating the contents of a rocky corner, was astonished, and somewhat alarmed, by the sudden appearance of a great white owl, whose afternoon *siesta* she had unconsciously disturbed, and who, after angrily fluttering over our heads, betook himself, in high dudgeon, to the neighbouring woods. We discovered his sleeping-place—a snug nook, shaded at the opening by gorse, but as

it extended far into the rock, we did not venture more than a peep, fearing that another member of the family might fly out and resent our intrusion. Reaching the top of the rocks, we sat a few moments to rest and enjoy the splendid view, and then ascending the moorland, and with much difficulty wading through a sea of stubborn gorse, we at last found a well-trodden sheep-path; and, following its course, we descended at the other side of the hill, and soon joined our companions, and with them struck into the road that leads around the "Barber." That bold dark hill which forms so remarkable a feature in the scenery of the Vale of Llangollen, is (according to Roberts's guide-book) seven hundred feet above the level of the turnpike road. It derives its English surname from a tragedy which, some hundred years ago, was enacted on its summit. According to tradition, a barber (who also followed the vocation of village schoolmaster in Llangollen), wishing to cut short the gossiping propensities of a too talkative wife (who had threatened to disclose what she knew of a murder committed by him), severed her windpipe, and so silenced her for ever. The deed done, he fled from its consequences, but did not get very far, for he was arrested while washing his hands in the "Pistill Aber Adda," and finally sentenced to be hanged. This sentence was carried out on the summit of the "Geriant," and if the unlucky criminal was gifted with any taste for the beauties of nature, it must have greatly aggravated the horror of his punishment to be allowed to feast his eyes for one moment on the wide expanse of hill and dale, woodland and shining river, only to bid adieu for ever to the lovely scene, before being violently launched into an unknown and (to him) a dread and dark eternity. Taking the road down that side of the "Barber" that faces Llangollen, we noticed the *Athyrium Filix-femina* in great luxuriance; also the little *Dryopteris*, as usual rearing its emerald fronds from a bed of sharp loose stones; also some common varieties of the *Lastrea* family; and the *Polypodium vulgare*, with its dark-green tufts, showing fronds of a much larger growth than any we had previously met with.

Notes on some Ornamental (mostly Greek) Plants, which are commended to the notice of Nurserymen, Florists, and Amateur Cultivators.

The critic who judges the productions of nature enjoys an immunity from censure not conceded to him who criticizes works of art, whether literary or pictorial. He who deals with the current literature or art is sometimes censured for his good-natured opinions, and not seldom for too much harshness.

If he warmly commends a work by any of his contemporaries, he is liable to the accusation of adulation, and to the charge of fulsome flattery; while no bad motives are or can be urged against him who praises natural objects. He may be deficient in judgment, but his honesty and sincerity are rarely questioned.

The writer of the following remarks on species, which are believed to be valuable both as commercial and ornamental objects, is neither a florist, nor a nurseryman, nor an amateur; he is nothing at all, not so much as a member or a fellow of any scientific or literary body,—he is only a sincere lover of the beautiful, the useful, and the good, whether in nature or in art, and his views in presenting the following remarks are purely utilitarian.

The plants from which the following selection is offered were chiefly collected in Greece, in the spring and summer of 1862. They are selected from one of the largest collections ever brought from the eastern part of Europe, and from the adjoining coasts and mountains of Western Asia. A few are from the Pyrenées, also recently brought to England, and presented to the reader's humble servant by their collector.

The writer will not take the liberty of publishing the name of the gentleman to whom he is indebted for these treasures, but it will be given to any one who makes a private application to the editor of this periodical.

Several of the Natural Orders contain plants which are worthy of a place in the shrubbery or on the lawn; they are well adapted for bedding purposes, and some might even grace the conservatory. One paper or one essay will consequently contain but a small portion of the selection believed to be worthy of a trial; but it is intended to continue the papers serially till the whole be published.

It is hereby announced that only the BEST have been selected,

such as are remarkable for their beauty, neatness of foliage, good habit, etc. It is also the writer's aim to avoid all repetitions, viz. not to enter such plants as are already well known and deservedly popular.

As a beginning must be made somewhere, the *Boraginæ* are put foremost, not because they have any peculiarities entitling them to the distinction of leading the van, but because they happened to be at hand, and because the matter of the remarks was wanted to fill up a few pages of the magazine.

The first part of this paper will contain the plants which have their genera represented in our own small native flora; and the second will be devoted to those species which are foreign and belong to exotic genera.

The following foreign species, belonging to British genera, are recommended to the attention of cultivators of all classes, viz.

1st. *Lithospermum incrassatum*, Guss., a species which approaches *L. purpureo-cæruleum* in habit and general appearance. This grows in Spain, Naples, Sicily, Dalmatia, Turkey, etc. The specimen in our herbarium was collected about St. Givors, Central Pyrenees, and is expected to be sufficiently hardy to bear the cold of the winter in these islands.

Lithospermum fruticosum, L.,* is a dwarf, half-shrubby plant, apparently suitable for what is called a *rockwork*. The flowers are large, deep pink, the foliage linear and hoary.

Our specimen is from Montpellier; and its capabilities to endure the rigour of a British winter may be questioned.

Lithospermum Sibthorpianum, Griseb., *L. tenuiflorum* fl. *græca*, but not of Linnæus, is a somewhat hassocky but very dwarf species, only three or four inches high. Our specimen is from the Bay of Phalerum, in Greece. It flowers in March.

Note.—This species and *L. apulum* are stated to be annuals. Their cultivation, notwithstanding, may be worth a trial in col-

* "Of the *Lithosperma*, the handsomest is *L. fruticosum*, a plant of the South of France and South of Europe generally. It is shrubby, and has not much foliage, but fine blue flowers.

"*L. apulum* is a stiffish plant with small yellow flowers. It is also general in the south of Europe, though I have not found it here (Avignon), nor nearer than Montpellier.

"*L. incrassatum* I have only seen in a valley of the Pyrenees (St. Girons). Some doubt hangs to the last-named species, a doubt which will be removed before long."—From a Correspondent.

lections where many species are grown. Many annuals in favourable situations continue to exist in gardens; if once well-established, they continue self-propagated.

Echium plantagineum, L., is a tall and rather erect plant, with large intensely blue flowers. This specimen (*herbario in meo*) is from Laconia, between Gythesim and Levetsova. It flowers in April, and is annual.

Echium calycinum, Viv., another Grecian plant, grows at Lerna, near Argos.

Echium elegans, Lehm., is from Acro-Corinth, apparently an annual. The two latter-mentioned are not in Smith's *Prodromus Floræ Græcæ*.*

Cynoglossum columnæ, Tenore?, is a curious plant with yellow flowers and downy greyish leaves. All these plants have a strong family likeness. This specimen is from the valley of the Eurotas, and flowers in March. It is only found wild in the South of Europe, viz. in Naples, Sicily, Dalmatia, etc.

Cynoglossum cheirifolium, L., is a much finer plant than the above-mentioned, with hoary, velvety, neatly-shaped leaves and deep purple flowers. Both are probably perennial, like our two British species, though the majority of modern authors, Smith *e.g.*, call them biennials.†

The following plants belong to the Order *Boragineæ*, but they have neither generic nor specific representatives in Great Britain, viz., first, *Alkanna græca*, Bois., *A. pulmonaria*, Grsb., which is common in many parts of the Peloponnesus. It grows also in Turkey, Macedonia, etc. It is a showy plant, with numerous lanceolate leaves and deep yellow flowers. It is probably only half-hardy; yet it might be worth a trial in our climate. Is it in Smith's 'Prodromus'? ‡

* "*Echium calycinum* is common in the north of Europe. *E. elegans* is rarer. The chief place where I have seen it is the ascent to Acro-Corinth, where it abounds."

† *Cynoglossum cheirifolium* is common here, and in the whole Mediterranean region of France. So is *C. pictum*, a beautiful species, with pale-blue flowers streaked with a brighter blue. This last is common in Sicily. *C. columnæ* grows in Sicily, and is frequent in Greece, where I do not think I ever saw *C. cheirifolium*.

‡ "To *A. græca* may be added the rarer and still finer *A. orientalis*, which grows abundantly at Delphi and on the Acro-Corinth. Also *A. tinctoria*, a rather dwarfish species, the root of which yields a dye, and which stains the paper. This plant is covered with fine blue flowers, with the brilliant metallic glance so characteristic of the colours of the *Boragineæ*."—From a Correspondent.

Several *Onosmas* are found in Greece, and some of them may prove worth cultivation. *Onosma frutescens*, Lam., is a neat dwarfish species, with pale yellow flowers, somewhat like those of *Symphytum*. The specimen before the writer is from Mount Lycabettos, and is probably hardy enough to bear the winter temperature of England. It is one of Sibthorp's or of Smith's species; but does not appear in Nymann's 'Sylloge Floræ Europæ.'

Onosma pallidum is a slenderer and more upright plant, with larger and paler flowers. The specimen before the writer was collected between Lebadeia and the Triados.

Onosma orphanoides, Bois., is a taller and a stouter plant than any of the above-named species of this genus. It is from Megaspelion, and flowers in May.*

Some of the *Cerinth*es are well-known annual border flowers; and as their habit is good and their foliage neat and of a bright green, unlike the general colour and usual shagginess of the plants of this Order, they might be worth re-introducing, if, like many other good plants that have been neglected, they have already ceased to exist.

*Cerinth*e *retorta*, Sibthorp and Sm., and *C. aspera*, Roth, are probably both hardy enough for annuals; the former is from Mount Ithome, in Greece, the latter is from Naples.†

The gems of the Boragineous plants in our small collection are decidedly the two following, which are also probably the only two that would be worth continuous cultivation as permanent occupants of the *parterre* or conservatory. The first is *Mattia græca*, which has the habit of an alpine and rock-loving plant. Its leaves are in shape and hue like some of the well-known *Alyssums*; and its inflorescence is umbellate, not unlike the trusses of flowers of our common Cowslip or Oxlip. The colour

* *Onosma orphanoides* I have seen only in the rich vicinity of the Convent of Megaspelion (where the Greek Revolution began, and which had the glory of repulsing Ibrahim Pasha when he had nearly re-conquered Peloponnesus). To these may be added, from the south of France, *O. echioides*, which I have found lately for the first time. It is very like the others in habit, and its flowers are a still paler yellow than those of *O. pallidum*.

† *Cerinth*e *aspera* is very common about Naples. You can even see in the dried state how fine a plant it is. It is less common in Greece. *C. retorta* I have seen in a few places. My specimens are from the hill or mountain of Ithome, the seat of so many Messenian struggles. *C. minor*, a plant not unlike *C. retorta*, I have collected in Italy.

of the flowers is a very deep purple, nearly black in our specimen. Although in Europe almost exclusively confined to Greece, it is not in Smith's 'Prodromus.' Our specimen is from Mount Khelmos, and it flowers in June. But the showiest and handsomest of all the Greek *Boragineæ* is unquestionably *Mumbya cephalotes*, Bois., *Arnebia*, Dec., a plant which is neither in Smith's 'Prodromus' nor in Nymann's 'Sylloge.' This, like the last-mentioned, is a Mount Khelmos species, and flowers in June. The leaves are lanceolate, elongated, very hoary, mostly but not all radical; the flowering stem is stout, erect, and from 9-12 inches long; the flowers, as in *Mattia*, are umbellate, and the entire truss is not much smaller than a cricket-ball. The individual pips or flowers are quite as large as those of the common Primrose, and of the most charming yellow colour; its habit is quite unexceptionable.

The writer of these recommendatory remarks is too old to undertake so long a journey as to Mount Khelmos, in Greece, to see this fine specimen of the Greek flora, but he would gladly go so far as Snowdon to see it in a vital state, with all the concomitants even of Welsh scenery, notwithstanding the drawbacks of mist, drizzly rain, wind, snow, and hail. To admire it amid the fascinating loveliness and imposing grandeur of Greek scenery would be rather too much for an excitable mortal safely to undertake.

These two plants, viz. one of the *Mattias*, *M. græca*, a species which is probably not in our larger catalogues of collections, and certainly neither in Sweet's nor in Donn's, is hardy, being in Greece a mountainous plant. The other one, viz. *Mumbya cephalotes*, is one of the choicest species in the entire Order. It well deserves cultivation, and it will get a place and retain its eminence in the most select assortments of the vegetable kingdom.*

Finally, the writer hereby informs both amateurs and commercial cultivators, that the pickings from Greece, etc., in his possession, are by far, as a whole, superior to the few here presented as a sample. The best leg or foot has not been placed

* *Mattia græca* and especially *Mumbya cephalotes* are indeed splendid plants. I believe both were unknown until the most magnificent mountain in Greece, Mount Khelmos, in which are the falls of the Styx, was botanically explored within the last few years. You can imagine what a fine sight the *Mumbya* is on the steep, rocky sides of that noble mountain.

foremost. Some exceedingly handsome plants are in the Orders *Ranunculaceæ*, *Cruciferae*, *Labiatae*, *Compositæ*, *Orchidaceæ*, *Iridaceæ*, *Liliaceæ*. The *Ranunculaceæ*, *Leguminiferae*, *Umbelliferae*, *Saxifragaceæ*, *Compositæ*, *Gentianaceæ*, *Primulaceæ*, *Labiatae*, *Euphorbiaceæ*, are the great ornaments of the Pyrenees.

The botany of the Pyrenees is pretty well known, thanks to the eminent botanists, Boissier and Bentham, and to one of the contributors to the 'Phytologist.' A large list of Pyrenean plants was published in the above-named periodical, but the subject is not exhausted. The readers of this will find in the back numbers of this magazine the addresses, names, etc., of resident botanists, who will supply them with specimens, roots, and seeds.

Nurserymen of extensive connections can readily procure plants from the most remote parts of the world; others, whose correspondence may not be so extended, are recommended to apply to M. Theodore von Heldreich, director of the Botanic Gardens of Athens, who will readily supply applicants with living roots of plants, or seeds, or specimens; or such may apply to their humble servant, the editor of the 'Phytologist,' of 28, Upper Manor Street, Chelsea.

Note.—The writer of the above has just been favoured, through the kindness of a mutual friend, with some lists of roots, seeds, specimens, etc., which M. T. von Heldreich is ready to supply. There is no room for entering an abstract of these respective catalogues. It is hoped that some means will be devised for circulating among amateurs and nurserymen the most important articles of their contents.

ROMAN OATS.

Sir,—My attention has been recently directed to a letter in the 'Phytologist' for the current month, written "for Peter Lawson and Son," respecting an article on the "Roman oat" question, which appeared in your last month's issue of the same periodical. I must premise, in simple justice to myself, that the article in question was published in your pages in its present imperfect form entirely without my knowledge and concurrence; otherwise I might have supplied additional particulars as to the result of last year's trial of the oats, a course which might pos-

sibly have saved your correspondent's animadversions, by furnishing the "further manifestations" he seems to have expected. It appears almost superfluous to remind the writer that, as the opinion of "*nearly every one*" at the Battersea Park Show was communicated to me by him at the time in terms precisely synonymous to those in the said letter, it would have been a work of supererogation to have intruded any further notice of my oats in quarters where the firm he represents has so great influence.

Happily, however, another year's careful cultivation of the oats has warranted experienced agriculturists of the north of England in still retaining opinions entirely hostile to that of "*nearly every one*" at the Battersea Park Show.

I may further be allowed to state, at the risk of trespassing too much on your valuable space, that it is my intention to recultivate the original camp-ground next season, when I have no doubt the specimens with heads resembling onions will be brought permanently into the catalogue of mortal realities. In the meantime, the number of intending purchasers of the specimens already exhibited continues weekly to increase.

JAMES BINKS.

Pepper Moor, Alnwick, May 18th, 1863.

BOTANICAL NOTES.

1. *Petasites vulgaris* (Phytol., June, 1862) grows abundantly on the Surrey bank of the Thames, between Putney and Hammersmith Bridges, near to the latter. On the ascent, shortly before reaching Hammersmith Bridge, *Erysimum cheiranthoides* is very plentiful. *Verbascum nigrum* and *Diplotaxis tenuifolia* grow on the piece of waste ground immediately on the west side of the bridge.

2. I have received to-day (May 5) specimens of *Paris quadri-
folia* and *Dentaria bulbifera*, from a wood in the immediate neighbourhood of High Wycombe, Bucks.

3. The following less common plants were found in the neighbourhood of Stock, Essex, on the 4th ult.:—*Lepidium Smithii*, *Chelidonium majus*, *Veronica Buxbaumii*, *V. montana*, *Ajuga reptans* (a white variety), *Galeobdolon luteum*, *Lysimachia nemorum*, *Vinca major* (in a suspected locality), *V. minor*, *Orchis Morio*, a white variety of *Agraphis nutans*, *Convallaria majalis*,

etc. *Lathyrus Nissolia* is not unfrequent in the hedges, and *Hottonia palustris* was found last year in a pond in one of the woods, but this habitat is now destroyed.

4. On the 14th of April last, several specimens of *Anemone apennina*, *Corydalis solida*, and *Geum urbanum* were received from Brocklesby Park, Lincolnshire.

5. *Polygonum Bistorta* (see Phyt., June, 1862), occurs in large patches on the south bank of the ditch which intersects Battersea Park, near the ornamental water. *Saxifraga granulata* abounds in its immediate vicinity. This is the only locality in the neighbourhood of London for these plants with which I am acquainted.

6. *Teesdalia nudicaulis* was found abundantly, in full blossom, in its old habitat on Putney Heath, on the 22nd of April last.

7. A white variety of *Ranunculus bulbosus* has occurred for the last four years by the catacombs in Brompton Cemetery. Is this a common form of the species? I have never met with it elsewhere. *Geranium pyrenaicum*, *Fedia olitoria*, and *Tragopogon pratensis* are abundant in various parts of the grounds.

8. *Convallaria majalis* and *Vinca major* are not now to be found in Dulwich Wood. *Sisymbrium thalianum* abounds on a wall in Lower Sydenham.

JAMES BRITTEN.

Reviews.

L'Ardenne. By FRANÇOIS CREPIN, Professor of Botany in the Horticultural College of Gendbrugge-lez-Gendbrugge. Brussels: G. Mayolez, Rue de l'Impératrice. 1863.

Ardenne covers a considerable portion of the southern and western part of the kingdom of Belgium. It is bounded on the south by the department of Ardenne, in France, and on the east by Luxembourg and Rhenish Prussia. There is not room here for even an epitome of M. Crepin's elaborate notice of the physical condition of this tract, the most hilly (? mountainous) of this part of Europe.

It may be briefly stated that it is watered by the Meuse, and by many smaller and chiefly tributary streams to this the chief river.

The greatest elevation is 680 metres; the rocks are of the transition class, between primary and secondary, viz. siliceous, cretaceous, etc.

The physical description of Ardenne fills up twenty-six pages of our author's pamphlet, and the descriptive catalogue (*c. raisonné*) about thirty-four.

The whole number of Phænogamous plants, with the Filices and Fern-allies, is 663. Future researches will probably increase this number to upwards of 700 species.

The following non-British species are enumerated among the plants of Ardenne, viz. *Anemone sylvestris*, (*Anemone Pulsatilla* is not one of the species of this tract,) *Ranunculus platanifolius*, (there are only eleven species of the genus *Ranunculus*. The *Ranunculi Babingtoniani* do not grow in Ardenne?) *Aconitum Lycoctonum*, *Arabis arenosa*, *Lunaria rediviva*, *Thlaspi calaminare*, *Genista germanica*, *G. sagittalis*, *Trifolium montanum*, *Orobis vernus*, *Sedum aureum*, *Potentilla procumbens* (this species has been found in England, of spontaneous growth, but it is not yet established here), *Epilobium collinum*, *Selinum carvifolium*, *Orlaya grandiflora*, *Saxifraga sponhemica*, *Vincetoxicum officinale*, *Cuscuta densiflora*, *Gratiola officinalis*, *Digitalis lutea*, *D. grandiflora*, *Linaria striata*, *Galeopsis dubia*, *G. intermedia*, *Stachys alpina*, *Campanula Cervicaria*, *Specularia Speculum*, *Galium sylvaticum*, *G. sylvestre*, *Centaurea Jacea*, *C. montana*, *Arnica montana*, *Senecio Jacquinianus*, *Scorzonera humilis*, *Hieracium Auricula*, *Rumex scutatus*, *Euphorbia Cyparissias*, *Ornithogalum sulphureum*, *Phalangium Liliago*, *Orchis coriophora*, *O. incarnata*, *Calla palustris*, *Juncus Tenageia*, *Luzula vernalis*, *L. albida*, *Carex canescens*, *C. maxima*, *Baldingera colorata* (a grass), *Calamagrostis sylvatica*, *Poa serotina*, *P. sudetica*, *Bromus grossus*, *Festuca sciuroides*, *Struthiopteris germanica*, *Asplenium Breynii*, *Lycopodium Chamaecyparissias*, *L. complanatum*. These are all the non-British plants enumerated in this catalogue, barely a tenth part of the whole.

Probably the excluded species are about an equal number; for example:—

The following list comprehends the species which are sub-spontaneous or but partially naturalized, viz. *Dianthus plumarius*, *Spergula saginoides*, *Geranium phæum*, *Barbarea præcox*, *Hesperis matronalis*, *Lunaria biennis*, *Viola rothomagensis*, *Astragalus*

Cicer, *Coronilla minima*, *Lythrum virgatum*, *Sedum Cepæa*, *S. Anacampseros*, *S. boloniense*, *Sempervivum tectorum*, *S. Funkii*, *Rosa alpina*, *Epilobium origanifolium*, *Isnardia palustris*, *Peucedanum Ostruthium*, *Myrrhis odorata*, *Ribes petræum*, *Saxifraga cæspitosa*, *Asclepias Cornuti*, *Gentiana lutea*, *Melampyrum nemorosum*, *Linaria simplex*, *Salvia Sclarea*, *Hyssopus officinalis*, *Satureja montana*, *Teucrium montanum*, *Jasione perennis*, *Rumex alpinus*, *R. Patientia*, *Alchemilla alpina*, *Salix incana*, *S. phyllifolia*, *S. helvetica*, *S. rosmarinifolia*, *S. herbacea*, *Allium Schænoprasum*, *Muscari botryoides*, *Iris graminea*, *Narcissus poeticus*, *Leucojum æstivum*, *Potamogeton prælongus*. The whole number of these is 45.

The species remaining to be detected, as the result of further explorations, are as follows, viz. *Ranunculus trichophyllus*, *R. lanuginosus*, *Aconitum Napellus*, *Dianthus superbus*, *Cerastium obscurum*, *Geranium palustre*, *G. pusillum*, *Malva sylvestris*, *Polygala austriaca*, *P. Chamæbuxus*, *Pyrola secunda*, *Nasturtium palustre*, *Erysimum cheiranthoides*, *Trifolium rubens*, *T. spadicum*, *Scleranthus perennis*, *Sedum villosum*, *S. album*, *Potentilla rupestris*, *P. verna*, *P. reptans*, *Circæa alpina*, *Myriophyllum verticillatum*, *Ribes alpinum*, *Swertia perennis*, *Lithospermum purpureo-cæruleum*, *Scrophularia Ehrharti*, *Rhinanthus angustifolius*, *Pinguicula vulgaris*, *Lathræa Squamaria*, *Campanula pusilla*, *C. latifolia*, *Galium montanum*, *G. tricornis*, *Knautia sylvatica*, *Carduus crispus*, *Matricaria inodora*, *Senecio erucæfolius* (not *erucæfolius* as in exemplar), *Hypochæris glabra*, *Rumex conglomeratus*, *Polygonum Bellardi*, *Alchemilla alpina*, *Euphorbia dulcis*, *E. exigua*, *Salix pentandra*, *Gagea lutea*, *Aceras anthropophora*, *Orchis sambucina*, *Epipogium Gmelini*, *Scheuchzeria palustris*, *Lemna polyrrhiza*, *L. trisulca*, *Carex dioica*, *C. davalliana*, *C. paradoxa*, Willd., *C. teretiuscula*, Good., *C. Schreberi*, Schrank, *C. brizoides*, *C. tomentosa*, *C. paludosa*, Good., *C. riparia*, Curt., *Scirpus compressus*, *Eriophorum gracile*, *Festuca pratensis*, *F. rubra*, *Alopecurus agrestis*, *Triticum caninum*, *Hymenophyllum tunbridgense*, *Polystichum cristatum*, *Ophioglossum vulgatum*, *Equisetum* (in exemplar c for e) *umbrosum*, *Isoetes lacustris*. Upwards of seventy plants are believed to be undetected in Ardenne, and are held out as the reward of subsequent explorers.

The rare or very rare British plants entered in this catalogue are *Anemone ranunculoides*, *Actæa spicata*, *Dianthus cæsius*,

Elat
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Elatine hexandra, *Impatiens Noli-me-tangere*, *Pyrola rotundifolia*, *Corydalis solida*, *Cardamine impatiens*, *Sinapis Cheiranthus*, *Thlaspi perfoliatum*, *Genista pilosa*, *Trifolium ochroleucum*, *Lathyrus sylvestris*, *Corrigiola littoralis*, *Cotoneaster vulgaris*, *Cicuta virosa*, *Enanthe pimpinelloides*, *Primula elatior*, Jacq., *Centunculus minimus*, *Gentiana Pneumonanthe*, *Myosotis sylvatica*, *Pulmonaria angustifolia*, *Atropa Belladonna*, *Verbascum Lychnitis*, *Melampyrum arvense*, *Mentha rotundifolia*, *Ajuga pyramidalis*, *Campanula Rapunculus*, *Wahlenbergia hederacea*, *Phyteuma spicata*, *Dipsacus pilosus*, *Inula Helenium*, *Senecio viscosus*, *S. sarracenicus*, *Arnoseris minima*, *Hypochaeris maculata*, *Crepis biennis*, *Hieracium tridentatum*, *Daphne Mezereum*, *Polygonatum multiflorum*, *P. verticillatum*, *Malaxis paludosa*, *Potamogeton polygonifolius*, *Carex pauciflora*, *C. elongata*, *C. digitata*, *C. laevigata*, *C. hornschruchiana*, *Heleocharis uniglumis*, *Leersia oryzoides*, *Calamagrostis lanceolata*, *C. Epigejos*, *Melica uniflora*, *Poa sudetica* (a doubtful native of England), *P. compressa*, *Elymus europæus*, *Asplenium septentrionale*, *Osmunda regalis*, *Botrychium Lunaria*, *Pilularia globulifera*, *Equisetum hyemale*, *E. sylvaticum*, *Lycopodium annotinum*. The above list comprehends above sixty species.

The following list of Lorraine species, or of plants growing in the province which bounds Ardenne on the south, is compiled to exemplify the far greater richness of the southern districts, which may be easily contrasted by comparing the foregoing with the subsequent list. *Anemone alpina*, *A. narcissiflora*, *A. vernalis*, *A. sylvestris*, *A. Hepatica*, *Corydalis fabacea*, *C. cava*, *Arabis brassicæformis*, *A. sagittata*, *Dentaria pinnata*, *Biscutella laevigata*, *Silene rupestris*, *Althæa hirsuta*, *Herniaria hirsuta*, *Viola stricta*, *V. mirabilis*, *Medicago scutellata*, *Vicia lutea*, *V. hybrida*, *Bupleurum longifolium*, *Angelica pyrenæa*, *Laserpitium latifolium*, *Siler trilobum*, *Peucedanum Cervaria*, *Tordylium maximum*, *Sibbaldia procumbens*, *Potentilla micrantha*, *Sedum Rhodiola*, *S. alpestre*, *S. elegans*, *Saxifraga aizoon*, *S. stellaris*, *S. decipiens*, *Lonicera nigra*, *Galium montanum*, *Scabiosa suaveolens*, *Valeriana tripteris*, *Pyrola uniflora*, etc., *Scrophularia vernalis*, *Veronica verna*, *Rhinanthus angustifolius*, *Stachys annua*, *Teucrium Botrys*, *T. Chamædrys*, *Gnaphalium norvegicum*, *Adenostyles albifrons*, *Inula salicina*, *Leucanthemum corymbosum*, *Petasites albus*, *Doronicum Pardalianches*, *Senecio subalpinus*, *Prenanthes purpurea*,

Leontodon pyrenaicus, *Carduus Personata*, *Carlina nebrodensis*, *Picris pyrenaica*, *Sonchus alpinus*, *S. Plumieri*, *Crepis blattarioides*, *Hieracium aurantiacum*, *H. alpinum*, *H. Mougeotii*, *H. Schmidtii*, *H. albidum*, *H. cydoniæfol.*, *H. magistri*, *H. præruptorum*, *H. auratum*, *Androsace carnea*, *Gentiana lutea*, *Myosotis alpestris*, *Veronica saxatilis*, *Bartsia alpina*, *Pedicularis foliosa*, *Veratrum Lobelianum*, *Allium Victorialis*, *Orchis globosa*, *O. cinerea*, *Limodorum abortivum*, *Loroglossum hircinum*, *Cypripedium Calceolus*, *Carex frigida*, *Botrychium matricarioides*, *B. rutaceum*, *Polystichum Lonchitis*, *Asplenium germanicum*, *Pulmonaria tuberosa*.

Ex ungue leonem,—you may judge of the lion by his claw. The above list, which might be doubled by adding more names of rare plants, shows what influence a degree or two degrees of latitude exerts on the vegetation of an extensive country.

Something is probably owing to altitude as well as to a further extension south, which gives Lorraine a richer flora than Ardenne. Lorraine, as it existed formerly as a province, probably is more extensive than its northern neighbour, and its elevation is greater. Both Lorraine and the Vosges have higher points than the highest in the province so well illustrated by M. Crepin.

A sojourn in Ardenne, in Lorraine, or in the Vosges, in early summer, viz. in the leafy month of June, would be to a botanist a treat of no ordinary attractiveness. This season, 1863, we should like to undertake this botanical tour next week (on the 18th May), and we would take as silent guides this tract of M. Crepin's, a thin 8vo of 60 pages, and Dr. A. Godron's 'Géographie botanique de la Lorraine.'

This journey would not be quite so productive as a visit to the Fountain of Vaucluse, celebrated in song by the greatest of Italy's lyric poets, and quite as famous for its botanical rarities. The hills of Ardenne and the mountains of Lorraine and the Vosges are not so rich in rare alpine plants as Mont Ventoux, and the central and high peaks, the loftiest of the Pyrenees; but the former would afford no ordinary gratification to one who rarely sees anything higher than Primrose Hill, Hampstead Heath, or Harrow, in Middlesex; Hayes Common and Shooter's Hill in Kent; and in Essex, the hills of Brentwood and Epping Forest.

The Flora of the West Riding. The Phænogams by L. C. MIALL.
The Cryptogams by B. CARRINGTON, M.D.Ed., F.L.S. London : William Pamplin.

To those botanists who visit the West Riding or the Craven district of Yorkshire, this well-compiled list of its vegetable productions will be a most acceptable and useful pocket-companion. It will inform them where the rare plants grow, and it will supply them with the address of the local botanists whose help will be required to point out to the passing stranger the exact localities where the rare species are to be found.

There are few indeed of the fraternity who have not heard or read about the botanical celebrity of Settle, Ingleton, Ingleborough, Penyghent, Giggleswick, with its productive scars, its ebbing and flowing well, its hanging woods and lovely situation ! Who has not heard of Gordale, Malham (with its Cove and its tarn) ? Wharfedale and Bolton Abbey, Thorpe Arch, etc., are familiar as household words among the botanists of England. This *Flora* will be a great acquisition to all who either have seen or who desire to see these lovely scenes, called, by some who have seen Continental scenery, the Switzerland of England.

In a modest and sensible introduction, our author instructs his readers how they may overcome the difficulty of classification ; and, in truth, he has "hit the nail on the head." System is of no use till the tyro has got some considerable number of things to arrange. A multitude of objects huddled together at haphazard is like a lumber-room, or a heap of books of which the owner cannot avail himself, because he cannot lay his hands on the particular volume which would help him. But system is of no use, and cannot be understood, until it becomes a necessity, a something which is indispensable to the student. Let the author explain his views in his own way, which he does very briefly and clearly.

"The difficulty of scientific classification, and the unreasonable objections so often made to it by the ignorant, take their origin simply in non-acquaintance with the objects to be classified. No man of regular habits finds much difficulty in classifying his books or his papers, or even his thoughts. He finds classification in these matters essential to the proper management of his concerns, knowing well that without it he could neither remember where his property was disposed nor combine his acquirements

to any advantage. Scientific classification proceeds from exactly the same source,—the inability of the mind to receive a mass of unarranged particulars.”

“Those who make foolish objections to systems of names as dry and unprofitable, may be reminded that the most valuable discoveries in science, and generally in philosophy, have been merely fresh combinations of facts known before. If there be a distinction between the classification of science and that necessary to every-day business, it is this, that in the latter the distinctions are precise and the method symmetrical, while in the former both are, for the most part, rough and arbitrary.”

A list of the plants, or rather of the rare plants, in the Craven and south-west districts of Yorkshire, would be labour and cost wasted. Lists of Ardenne and Lorraine plants may be of some use to inform those who will never see M. Crepin's and Dr. Godron's works, that plants grow in these provinces common to both England and Belgium and France, and that there are many plants to be found in these Continental countries which we have not in the British Isles. But such lists would be quite superfluous here, because everybody who means to visit the places above mentioned, and which have been familiar since the times of Ray, Dr. Richardson, Th. Willisel, Mr. Lawson, Wm. Curtis, Sir J. E. Smith, etc., will purchase this work, carry it in their pocket, and wear it out by frequent consultation of its instructive pages.

The size of the book may be estimated from the fact that the pages filled up with the Phænogamous plants of the district are just fifty-one, and the Cryptogams occupy thirty-seven. The latter portion is, as above stated, by Dr. Carrington, who professes his obligations to Mr. W. Wilson, Dr. Lindsay, Mr. Mudd, T. Moore, Esq., F.L.S., Mr. Tom Stansfield, and other friends, who aided the learned author “in the determination of species.”

Special thanks are awarded to Mr. J. Nowell, of Todmorden, in a separate article.

Thanks are tendered to “the following gentlemen,” who have given the author “notes or lists of species:”—J. G. Baker, Esq., L. Miall, Esq., Dr. Deighton, Mr. C. Hobkirk, Dr. Windsor, J. Cramond, Esq., Rev. J. Pinder, P. Inchbald, Esq., R. Clapham, Esq., Mr. C. Eastwood, and the members of the Todmorden and Thirsk Botanical Societies.

Mr. Miall's obligations are “too many to be singly men-

tioned." J. G. Baker, Esq., of Thirsk, and J. Emmet, Esq., of Thorp Arch, are most cordially thanked for suggestions, corrections, and co-operations.

The excellent author of the Phænogamous part of the work is most respectfully reminded or informed, if it may be assumed that he never heard of the following fact, that Giggleswick Tarn has been drained, and is now cultivated; and probably this is no recent change. In 1852, just eleven years ago, the place where *Lobelia Dortmanna* used to grow was a meadow, somewhat depressed, but bore no traces of having been recently submerged. See p. 26.

On p. 18 there is a novelty of orthography, viz. *Shignell*, which used to be Spignel; and *loco in eodem men pro meu*. On p. 4, *Mithridate* is printed *Mithradate*. Attermire is invariably printed Attermine. Which is right,—the supplement to the 'Yorkshire Flora,' where this once-celebrated locality is invariably printed "Attermire," or that of the work under review, where the name of these rocks is invariably printed "Attermine"?

Some botanists—the writer of these remarks is one—might think *Lysimachia thyrsiflora* sufficiently rare or local to have, in the West Riding, a more precise description of its places of growth than the very general one of *marshy heaths*, of which there are thousands of acres not more than six or seven miles from Settle. *L. Nummularia* has nine stations entered! *L. thyrsiflora* is a much more uncommon or unfrequent or rare plant than Moneywort. It is localized "wet moors," as if it were as common as the Heaths, *Erica Tetralix*, etc. These plants grow generally on damp moorish places, where the subsoil is gritty or gravelly, and where the underlying rock is some kind of gritstone. *Lysimachia thyrsiflora* doubtless grows in such soils and situations, but how seldom is it found!—so unfrequent, that it was overlooked for many centuries,—not exactly overlooked, but not detected.

We hope Mr. Miall, in the next edition of his very useful and well-compiled Flora, will tell us where this species of Loosestrife grows; on what heathy moors, and near what town or village it is to be found.

Quercus sessiflora is probably another typographical error. *Betula*, or its varieties, are rendered unintelligible by confounding *Alnus* with *Betula*, or *Betula* with *Alnus*, or substituting the

initial of the one for that of the other. For example, *A. glutinosa* (common B.) (*sic*), *A. verucosa* (*sic*), is a quotation from the supplement to the Yorkshire Flora. The correct form is *Betula alba*; for variety, *verrucosa*, not *verucosa*.

Topfielda is a new mode of spelling the name of a plant which commemorates one who should not be forgotten, as being a celebrated English botanist in not very remote times. Alas! memory is treacherous; the place where we are known now will soon "know us no more." The remembrance of great men has perished—of men who have done more harm or more good to society than the innocent culler of simples. Where is the authority for this innovation? Why has the author transmogrified a well-known name? Is it a *lapsus* or an intentional alteration? In p. 93 this name (term?) is printed *Tophielda*. Which is the true reading or *scription*,—*Tofieldia*, *Topfielda*, or *Tophielda*? Authority and custom sanction the first form.

On p. 51, *sub* *Bromus*, and underneath *B. giganteus*, there is put *F. triflora*, a mingling or mixture of two genera. No cause for wonderment here, for ever since we knew *Bromus giganteus*, or *Festuca gigantea*, the unhappy plant has, like Noah's dove, found no rest in any genus. Like a shuttlecock, it has been tossed or trundled about between *Festuca* and *Bromus*, from the one to another. Analogy, grammar, and custom require the masculine form, *B. gigant.*, var. *triflorus*.

Anechsa, Alkanet, p. 32, is an evident misprint for *Anchusa*. *Officinate*, p. 22, is another of these examples of inaccurate printing for *T. officinale*.

Again, in the south of England *Crepis biennis* grows more commonly on banks and about the borders of fields than among crops "in-cultivated fields." See note, p. 21.

Helminthia echiodes is an uncommon form of the specific name. Possibly the author and compositor thought it was long enough without the additional syllable; but *echioides* is the usual form. Underneath there is *P. hieracioides*; why not also *H. echioides*,—*euphoniæ causâ vel analogiæ vel usus*?

We wish specially to be informed if *Melilotus officinalis* is really so, or the common form in England and on the Continent also, viz. *M. arvensis*. See Errata.

On p. 57, why is *ramosum* the solitary exception to the rule—"Adjectiva, participia pronominaque cum substantivis genere,

numero casuque concordant." Is there no fear of affronting or offending Priscian's ghost among botanists?

Query, is variety *repandum*, p. 60, the correct orthography of this adjective?

Is *MANNUAL*, p. 94, the usual spelling of a derivative of *manus*?

On p. 93 there are the following remarkable examples of nomenclature:—*Cuscuta europea*, *Pulmonaria angustifolium*—something worse than spelling (error maximus in *scholis grammaticalibus*), *Oxyria reinformis*—the right letters are all present, but they are not in their right places; *Tophielda palustris*, before mentioned.

In list of errata, for *F. triflora* read *B. triflora*: error maximus; it should be *B. triflorus*, by the rule *Adjectiva, participia et nomina cum substantivis concordant genere, numero casuque*.

Note.—The writer has a strong impression that *Plantago maritima* grows near the Rye-loaf, Settle; and he also thinks that he observed *Armeria maritima* in the same locality. Ask Mr. Tatham: he knows more about the botany of Settle than any living botanist.

As a second edition of this useful Manual will soon be required, it is to be hoped that these minor blemishes will disappear. The work is warmly recommended to all botanists who intend visiting this beautiful picturesque district.

The Field Naturalist's Scrap-Book.

After this number of the 'Phytologist' was sent to press, through the kindness of one of our obliging correspondents, four numbers of the above-named serial reached our office, and no time is lost in here warmly commending it to the patronage of our readers.

In external appearance, it resembles the MS. Magazine of the Glasgow naturalists, only it is lithographed, and is issued in monthly parts, not in volumes. It has, besides, another distinguishing feature, viz. several copies are in circulation among the members, and it is sold at the very moderate price of threepence.

Communications, orders for the periodical, are requested to be sent to Mr. Ker, 4, Basnet Street, Liverpool. This new candidate has our suffrages and good wishes.

Mr. Webb, one of our correspondents, has published, in No.

II. p. 28, a notice of *Fumaria media*, Loisel., which he found "sparingly in a small piece of cultivated ground south of Forret Road and west of Park Road, close to Claughton village, on the Cheshire side of the Mersey; different in habit from *F. officinalis*, but having the spatulate lower petal and the retuse fruit of that species. . . . It has not previously been recorded in Britain."

In the beginning of this month, viz. June, 1863, while botanizing near Dartford, and not far from Greenstreet Green, we met with a form of *Fumaria* new to us, with very long stem, long, very slender, almost capillary leaves, and white flowers, which are rather smaller than those of *F. capreolata*, or *F. pallidiflora* as we call it, of the learned botanical Professor of Cambridge. This stranger is hereby recommended to the respectful attentions of those who do not disdain to give a passing glance at these interesting strangers who come to endeavour to effect a settlement among the genuine productions of our native land.

"On the Violets and Pansies of the Liverpool District.

"As the Violets and Pansies are now, or will be shortly in proper condition for examination, the present is perhaps a favourable opportunity for expressing an opinion on those reported in our district, with the object of clearing away the confusion there is in Dr. Dickinson's 'Flora,' and that I know exists in the minds of our botanists, regarding these plants.

"*V. palustris*, L., boggy places, occasional. *V. odorata*, L., hedgebanks, pastures, occasional, rare.

"Mr. Fisher is intending to write upon the claim of this species to be considered indigenous, and is in a better position to do so than myself. *V. hirta*, L., reported on late Mr. Shepherd's authority, but probably an error, not being a plant likely to occur with us.

"*V. sylvatica*, Fries. This is a plant that from (and before) Smith's time, until fourteen or fifteen years ago, passed current among British botanists as *V. canina*, L., and is still so called by large section. The cause of change of title may be thus explained:—Linnæus's name of *canina* was applied by him to the present and following species: when it was found necessary to separate the two, this previously collective name was restricted by Fries (1817) to the latter, and this author then proposed *sylvatica* for the present species. His views were adopted by Continental botanists; and such being the case, the British, upon finding out years afterwards their non-agreement, had to put up with the inconvenience of transferring names for the sake of obtaining uniformity of nomenclature; but, as will be shown subsequently, this desirable result has not been arrived

at amongst themselves. *V. sylvatica* comprehends two well-marked forms, viz. *V. Reichenbachiana*, Boreau, β , *V. Riviniana*, Reich.

"Both are plants of our district, the latter very common, and the first probably either frequent or common, but on this point we want information. The distinctive characters will be found in Babington's 'Manual,' ed. 5, p. 38. *V. flavicornis* of Forster, E. B. S. 2736 (not of Smith) a dwarf form with large flowers—it is hardly worth mentioning. *V. canina*, L., (Fries,) known from the preceding species by the absence of the short central barren rosette of leaves, occurs with us in a wide range of forms upon the sand-hills bordering the Mersey and Dee, and very rarely upon sandy ground inland. It is the *V. pumila* of Hooker and Arnott (but not of Villars), and is given under this name in Dr. Dickinson's Flora; it is also the plant there meant by *V. lactea*, Smith, as a specimen I possess from Mr. Sansom clearly proves. The typical form is described with cordate-oblong leaves, roundedly acute; the forms *V. montana*, L., and *V. Ruppii*, Auct., are here included, and we have also the form *V. flavicornis* of Smith, which is of smaller growth with cordate leaves: more of these are worth separating as varieties. We have not the variety *V. lactea*, Sm., which is now better known as *V. lancifolia*, Thor.

"*V. tricolor*.—Those who have paid any attention to this species will have noticed the great diversity of appearances it presents, varying in the wild state from the plant with the corolla an inch in length to that with the petals considerably less than the calyx (*V. arvensis*); and between these two extremes connecting links (in this respect) are frequently found in our district. The large-flowered form is rare with us, the smaller is common. The species is usually annual, but plants are occasionally found of two or more years' duration."

F. M. WEBB.

BOTANICAL NOTES, NOTICES, AND QUERIES.

RETROSPECTIVE CRITICISM.

The following lively and graphic morsels of criticism have pleased us so much, that we are induced to submit them to the readers of our periodical. The fair authoress, it is humbly hoped, will graciously condone our publication of what was written for private or personal perusal.

"I hope you will tell the Editor, with the compliments of an *Irish native*, that I do not believe that my countrymen ever fed on 'Wood Sorrel' (or on each other either), as that learned author of the sixteenth century states. During the famine of 1846 I was staying for some months at Dingle, on the south-west coast, and in that neighbourhood the people were reduced by starvation to eat seaweed; but Wood Sorrel grows so scantily in our island, it would have never been worth gathering. By the way, if the Editor and his botanical *confrères* have not yet visited

that wild and beautiful country, they would find a large and interesting field of labour, from Killarney round the headlands to Dingle, and from thence to Dunquin, and (if they are good sailors) to the Blecket Islands. Talking of the beauty and size of Fuchsias, etc., in Guernsey, I must also say that at Dingle they attain an immense size, the climate is so warm and mild. I should also like to tell them of the Myrtles, twenty feet high, to be seen at "Myrtle Grove," in Youghal. Myrtle Grove is famous for its ancient Yews, Bays, and Myrtles, planted by Sir Walter Raleigh, he having resided there during the years 1588 and 1589, and in the *gardens there he first* planted Ireland's blessing and Ireland's curse—the Potato. Do you know any botanist who would kindly send me a few fronds of the *Hymenophyllum tunbridgense*, or any member of that family, in exchange for the *Dryopteris*, *Phegopteris*, or any of our natives, among which we boast the *Asplenium viride*?

M.*B. B.

EXOTIC AND RARE PLANTS AT WANDSWORTH.

The following exotic and rare plants were found on the 27th of May last in the piece of waste ground at Wandsworth Steamboat Pier, which formed the subject of a paper in the 'Phytologist' of January, 1863.

Lepidium Draba. Covering a very large space in the second division of the said piece of waste ground. It was blossoming abundantly, and appears to be most firmly established.

Diplotaxis tenuifolia. On the bank facing the river, abundant.

Melilotus parviflora. Scattered all over the ground, very abundant.

M. messanensis. With *M. parviflora*, but less frequent.

Galium sp.? Very abundant.

Anagallis cærulea. In the second division *only*; frequent.

Plantago Lagopus. In the second division *only*; very abundant.

Owing to the forwardness of the season, the foregoing plants were in an unwonted state of luxuriance, especially *Lepidium Draba*, which was very conspicuous. *Trifolium resupinatum* and others were appearing, but were not in blossom. The exotic *Ononis*, mentioned in the previous paper, is appearing in great strength.

I may just mention that, should any botanist in the country be desirous of obtaining specimens of all or any of these plants, I shall have much pleasure in forwarding them, on receipt of stamps for the postage.

18, Shawfield Street, Chelsea.

J. BRITTEN.

1. *Corrections to the Flora of Ireland* (No. 56, N.S.)—Since the publication of my remarks on the Flora of Ireland in the December number of the 'Phytologist' for 1859, I have, from the examination of recent specimens received from Ireland, been inclined to doubt some of the facts contained in the above-named paper. *Muscari racemosum*, which I saw growing on the banks of the Blackwater, near Fermoy, I apprehend to be a very different plant, viz. *Agraphis nutans*. *Inula Conyza* was likely a form of *Pulicaria dysenterica*; *Caucalis daucoides*, a species of *Anthriscus*; *Sedum villosum*, likely *Sedum anglicum*; and *Melica nutans*, on Cave Hill, Belfast, *Danthonia decumbens*.

2. *Claytonia alsinoides*.—This plant I have cultivated for some years, and am really puzzled what to think about it. Some of the plants blossom in May, continue in flower till October or November, and remain

alive till late in the following spring, appearing to be perennial; others flower in May, shed their seed during the summer, and succumb on the approach of winter, which makes me (contrary to my first impression) consider it to be only an annual after all. An eminent botanist of the present day informs me this plant was introduced into Britain in 1794.

3. *Epilobium hirsutum*.—The mode generally adopted by Phænogamic plants to perpetuate their kind is by seed, but the method chosen by *Epilobium hirsutum* for the multiplication of the species appears to me strange, anomalous, and apparently unique. It is as follows:—Numerous horizontal scions are thrown out from the foot of the stem; these take root, and become detached from the parent plant by that part of the shoot nearest the stem, which rots. Each scion now becomes a new plant, firmly maintaining an independent existence. This very handsome plant is susceptible of being cultivated, which I have done for years. It however attains greater luxuriance and beauty when left to nature's care; in its wild state, under favourable circumstances, frequently attaining a height of six or seven feet. This plant, though plentiful in England and Ireland, is far from being common in Scotland, and appears to disappear altogether beyond the fifty-seventh parallel. It occurs in the neighbourhood of Perth in two or three localities, and is found in abundance near to Pittenweem, in Fife. *Epilobium angustifolium* seems to be more common in Scotland than this species, occurring in several places in Perthshire, as on the banks of the Almond Tay, near the foot of Ben Lawers, and is also found clambering to the top of the Ochils. JOHN SIM.

OBITUARY NOTICES.—MR. W. G. PERRY.

Died, on the 25th of March, 1863, at his residence in Warwick, Mr. William Groves Perry, aged sixty-seven. He was a Fellow of the Botanical Society of Edinburgh, and a contemporary of Loudon, Purton, and Bree, and a contributor to the earlier volumes of the magazine published by the former of these authors, as well as being himself the author of a work on the plants of Warwickshire, called 'Plantæ Varricensæ Selectæ,' which, although of great merit, was not as well known as it should have been. This was probably owing to its having been published by the author at Warwick. It has been for some time out of print, but at the time of Mr. Perry's death he had nearly completed the additions and corrections of a new edition, which we hope will shortly appear. Mr. Perry was for many years Honorary Secretary of the Warwickshire Natural History and Archæological Society, taking great interest in Archæology, as well as Natural History. The urbanity of his disposition, and the freedom with which he imparted information on all subjects which had been his study, has rendered his death much regretted by all who knew him.

Died, at Campbeltown Nursery, on the 23rd May, 1863, at a quarter to twelve o'clock, Thomas Lothian.

NAMES OF PLANTS.

Raspberry.—From its roughness. Compare Swedish and Dutch *rasp*; German *raspel*; Fr. *rape*,—whence rappee, a *rasped* kind of snuff.

Holihoc.—A.-Sax. *Holihoc*.

London Pride.—Possibly so-called because one of the few plants which grow well in, or near London. *None-so-pretty* (of which Nancy Pretty

seems probably a corruption) is another flattering appellation of the same old-fashioned plant.

Wake-Robin.—"From its acrimony" (Miller's 'Gardener's Dictionary').

Dock.—A.-Sax. *docce*.

Cowslip.—Possibly for 'cow's lip,' from some fancied resemblance in the segments of the corolla.

Charlock, Carlock, Cadlock, etc.—A.-Sax. *Cerlice*. *Cerlice* might be a corruption from *gearlic*, annual. (See on this point 'Notes and Queries,' i. p. 470, 3rd series.)

Sauce-alone.—"The Prussians eat the leaves with salted meats in the spring. . . . They are useful with lettuces and the colder salads." (With. 7th ed. vol. iii. p. 775).

Rampe.—Query from *rapum*, an excrescence on the roots of trees (so used in Seneca, Ep. 87), and applied to *Arum maculatum* on account of its farinaceous roots. 'Rapum' is used properly only of the roots of *Brassica*, etc. (thence rape-seed and 'Rapa,' the specific appellation of the Turnip); by later Latinists, however, of any plant with an enlarged or tuberous root. Gerarde has "*Rapum sylvestre*, Rampions" (*Campanula Rapunculus*). Ramps or Rampions (*Allium ursinum*) may probably be explained in the same way.

W. T. DYER.

ZOSTERA MARINA.

We heard a great deal, some short time ago, of a vegetable production bearing the name of the *Zostera marina*. But *Zostera* is plainly no feminine noun of the first declension, but the accusative singular, after the Greek mode of declension, of the masculine noun *Zoster* of the third,—in Greek ζωστήρ, -ος, δ, a girdle, and also a kind of seaweed. We ought therefore to say 'Zoster marinus.' *Zostera*, indeed, is the form which happens to be employed by Pliny:—"Folia lata colore viridi gignit, quod quidam Prason vocant, alii Zostera" (N. H. xiii. 49); but *Zostera* is here plainly the accusative.

W. T. D.

HELLEBORUS FÆTIDUS.

In reference to some observations offered some time since relative to the appearance of plants in localities not before noted, or rather after a lapse of some years, I have observed this year, in a very small part of a wood that has been partially cleared for the purpose of planting some Fir-trees, that at least a score plants of *Helleborus fætidus* have made their appearance. Myself and others have for years carefully examined this part of the wood, and have never seen a single plant growing in that part of the wood, and only a plant or two growing throughout the remaining portion. On the opposite side of the river, some fourteen years since, I should think hundreds of specimens may have been obtained. Since that time, or within a year or two after that time, I have never observed a single specimen, although I have repeatedly looked for it. I intend watching this plant, and hope to communicate again upon this subject.

Glewstone, near Ross, April, 1863.

BURTON M. WATKINS.

CARDAMINE PRATENSIS, VARIETY OF.

Enclosed I send you two specimens of variation in *Cardamine pratensis*. In one of them the raceme has a tuft of leaves at the top. In the other, after the flower has fallen, the pod swells, and ultimately bursts on one

side, disclosing a number of petals, which are not produced by the metamorphosis of stamens or any other organs, as the sepals, petals, and stamens all appear in their places before the abnormal flower is developed, of which the carpels act the part of calyx. This curious monstrosity was first discovered by me in a field at Widford, in 1859, and has appeared there every summer since, so that it may now be considered an established variety, which may perhaps even be propagated by seed, as the stamens are perfect, and their pollen may therefore be conveyed to other flowers; if, indeed, there is not sometimes a pod bearing seeds in a raceme whose other pods are changed into double flowers. I think you will agree with me in thinking these examples of variation worthy of the notice of botanists.

Chelmsford, June 19, 1863.

JOHN GIBBS.

SIR,—I have read your very interesting tour in North Wales with much pleasure and instruction. You there state having found near Oswestry *Linaria Cymbalaria*, in so great profusion as to appear "aboriginal." I also found large masses of it growing apparently wild at Llanrydd, near to Ruthin, the origin of which I attributed to the following cause, which it seems likely might have produced the profusion which you describe. Some twenty years ago, Mr. Dovaston, of West Felton, near Shrewsbury, well known in that neighbourhood for his great classical learning and enthusiastic love of nature, during a pedestrian tour in North Wales, desirous to naturalize this pretty plant, scattered its seeds in every locality he considered likely to suit its tender and harmless habits. Thirty years ago, I found it growing on the ruined walls of the Abbey at Birkenhead, in Cheshire, and could only account for its presence there, evidently quite wild, and its locality not easily accessible, by concluding it to be a legacy from the medical herb gardens attached to such seats of piety and learning. It was evidently no outcast of any garden. To any one not a botanist I should be afraid to pen these trifling remarks, but as among lovers of native plants I have ever found a kind of botanical freemasonry, I make no apology.

Hafod-y-coed, Llangollen, 12th June, 1863.

MONANDRIA.

SCOTCH THISTLE.

Which is the Scotch Thistle? is a question easier to ask than to answer. A fool may ask a question which the seven sages of Greece, if alive, could not answer. I will give the best reply I can, *more Scotico*, which, for the benefit of the less learned, may be translated, "like a Scotchman," *i. e.* by asking another, or several other questions.

Primo. Is not every native Thistle growing in Scotland, properly belonging to the country, and therefore Scotch?

Is not the nationality of every Scotchman determined by his being born in the "Land of Cakes"?

Are not all the thistles in Scotland truly Scottish, and dependent on that simple condition as produced in that country, grown north of the Tweed?

I have never observed a natural thistle exactly like the heraldic symbol or emblem impressed on the current coin, etc.

The plant in question was selected as a fit emblem of the manly spirit of Scotia's sons, who resent, and sometimes punish, rough treatment. This disposition is expressed both by the flower of the "Big Bur Thistle,"

supported by two nondescript leaves and the surrounding legend, "Nemo me impune lacessit," which may be freely rendered, "Beware lest I prick you."

This national badge was not selected, nor devised, nor introduced to exemplify the specific distinctions that exist in *Thistledom*, but to illustrate and represent the combative character of the people. Every one knows that a thistle will prick, and that a nettle will sting; and the lesson conveyed by these emblematic teachings is that the quietest and humblest may, by rough treatment, be roused to retaliation.

CHARLES HOWIE.

TRICHOMANES RADICANS IN WALES?

"The *Trichomanes radicans*, better known as the Killarney Fern, was found last week in North Wales by Mr. J. F. Rowbotham, a member of the Manchester Field Naturalists' Society. This interesting Fern has not been found in Great Britain, except in some portions of the lake district of Ireland, since the year 1782, when it was found at Bingley, in Yorkshire."

I forward the above extract from one of our Norwich papers of Wednesday last. Do you know anything about the fact of the Fern having been discovered in North Wales, and also whereabouts? If so, you will oblige

A. M. GIBSON.

Norwich.

CORALLORHIZA INNATA.

I have just been shown for identification a single specimen of the rare *Corallorhiza innata*. The young man who brought it states that it was gathered on the 4th inst., in marshy ground, in the woods of Aberdargie, parish of Forgandenny, about five or six miles south-west of Perth. The discoverer of this rarity is Mr. Robert Steele, son of Mr. Wm. Steele, teacher of languages, Perth Academy. He said that he only saw another example of it, and it was imperfect.

JOHN SIM.

GLYPHOMITRIUM DAVIESII.

Glyphomitrium Daviesii was got on Kilpatrick hills on Saturday, 16th, the old locality, it is supposed, of J. Drummond restored,—certainly a different one from Dr. Hooker's, in Wilson's 'Bryologia Britannica.' W. G.

Communications have been received from

W. Galt; L. C. Miall; James Binks; C. J. Ashfield; J. Britten; W. Pamplin; J. S. M.; John Sim; Sidney Beisly; W. Richardson; Cecil Monro; M. C. Cooke; M. A. Walker; H. Beisly; C. Howie; Andrew Stewart; M. B. B.; John Gibbs.

BOOKS RECEIVED FOR REVIEW.

The Preston Chronicle, May 23rd, 30th, June 13th and 20th.

Notes on Books.

The Naturalist's Scrap Book; Parts I., II., III., and IV.

A Lecture on the Variations of Plants, by John Gibbs.

List of Ornamental Greek Plants, by Th. von Heldreich.

ERRATA.—Page 576, line 2, for *Cambricus* read *Cambricum*; page 576, line 9, for *William Britten* read *William Mitten*.